

American Fruit Grower

APRIL • 1954



BUY USED EQUIPMENT FROM YOUR CATERPILLAR DEALER... **BACKED BY A BOND!**

NEVER BEFORE...
A GUARANTEE LIKE THIS...
UP TO \$10,000
"INSURANCE" TO PROTECT
YOUR USED EQUIPMENT
INVESTMENT!

Do you need another tractor this spring? Are you saying, "I can't afford a new machine . . . but I can't be sure of a used one?" Here's how you can take the guess and gamble out of buying used equipment:

Your Caterpillar Dealer now offers you "BONDED BUY" used Caterpillar-built equipment, guaranteed by a bond equal to the purchase price of the machine up to a maximum of \$10,000 and backed by The Travelers Indemnity Company. On the Dealer's Guarantee Bond he clearly states the terms of the guarantee. He gives you this protection when you purchase "BONDED BUY" Cat farm equipment.

You are also offered two other classes of used equipment buys . . . "Certified Buy" and "Buy and Try" . . . these cover used equipment of any make.

What does this mean to you? You are absolutely sure of what you're getting. Your assurance is in writing. What's more, no matter what your needs, cost-wise or work-wise, you'll find the equipment that fills the bill, backed by a written guarantee.

Only your Caterpillar Dealer makes this offer . . . so make his store your headquarters for both new and used farm equipment. See him today!

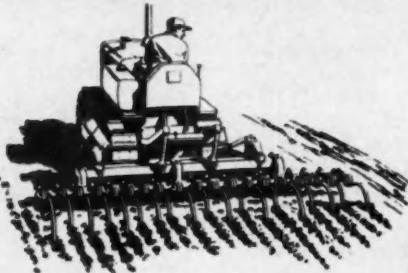
Caterpillar Tractor Co., Peoria, Ill., U.S.A.

DIESEL FARM TRACTORS • TOOL BARS • IMPLEMENTS

CATERPILLAR®

YOUR CATERPILLAR DEALER
IS HEADQUARTERS
FOR USED EQUIPMENT

"Bonded Buy" assurance effective only in the U.S.



DON'T GUESS OR GAMBLE...
ON USED EQUIPMENT...YOU KNOW WHAT
YOU'RE GETTING AT YOUR
CATERPILLAR DEALER!

Your Caterpillar Dealer offers you three clear-cut classes of used farm equipment. He backs each one in writing. You buy with confidence, sure that the equipment is honestly described. See him for the best values on the market!

1. "Bonded Buy"

Only the best in used Caterpillar-built equipment. Each "BONDED BUY" machine is backed by a Dealer's Guarantee Bond equal to the purchase price of the machine up to a maximum of \$10,000. This provides a guarantee for thirty days against unsatisfactory performance due to defective parts. If a part should prove defective within the guarantee period under the normal conditions of your job and with proper maintenance, your dealer will put your machine back into operating condition with no charge to you for parts and labor up to the amount of the bond. The Dealer's Guarantee Bond is backed by The Travelers Indemnity Company. The "BONDED BUY" symbol on used Caterpillar-Built equipment is your assurance of the highest quality used equipment.

2. "Certified Buy"

Next best buy in used equipment. "Certified Buy" covers farm machines of any make in good condition. Your performance guarantee is in writing backed by your Caterpillar Dealer.

3. "Buy and Try"

Bargains in used farm equipment of any make. Buy and try them for a period mutually agreed upon by you and your dealer. Each "Buy and Try" machine carries his written "money-back" agreement.

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Dow

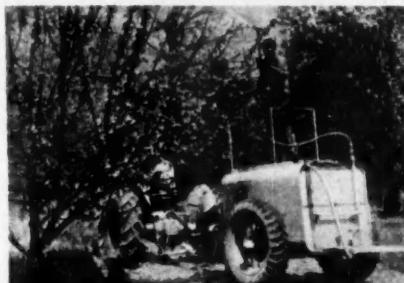


OVOTRAN WETTABLE controls mites in *all* life stages

Effective against many mite species

Ovotran® Wettable has proved itself the best product you can buy for mite control on apples. It provides maximum control—*because it kills mite eggs*. It is effective against a wide variety of mite species. Its excellent residual properties enable it to kill mites over a long period of time. Because of its low toxicity to beneficial insects that prey upon mites, Ovotran Wettable gives growers the big advantage of combining *chemical and biological mite control* in one operation. An important addition to your pest control program—Ovotran Wettable is compatible with commonly used insecticides and fungicides. Use it early as a preventive spray.

DN-289® applied in the dormant stage is recommended to control a variety of *insects*, especially aphids, scale insects, twig borer, eye-spotted bud moth and mites. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.



Application of Ovotran Wettable to apples in pink stage may be the first step in a spraying schedule to prevent mite build-up.

you can depend on DOW AGRICULTURAL CHEMICALS

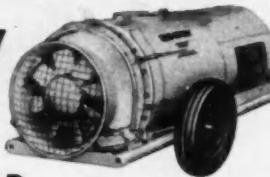
Dow

POWER PLUS!



High Speed Spraying • Low Cost Operation

BES-SPRAY —FULL VOLUME AIRSTREAM SPRAYER



- ★ 28,000 cubic feet per minute
- ★ More volume with less horsepower
- ★ One man operation
- ★ Double or single row spraying
- ★ 400 and 300-gallon spray tanks

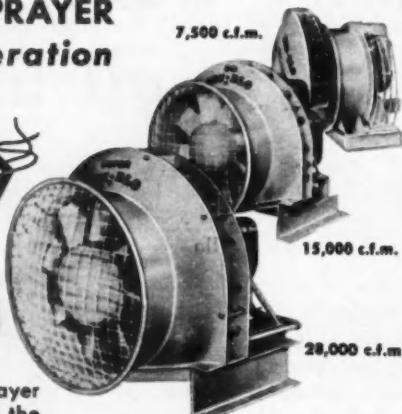
Equipped with BES-VAL Ball-Type Quick Shut-Off Valve

CONVERT YOUR SPRAYER for Airstream Operation



BES-BLO

Bring your present sprayer up-to-the-minute with the power and performance leader—BES-BLO



3 Sizes—There's one to fit your sprayer.

Send coupon for free literature

PROMPT DELIVERY. SEE YOUR DEALER

BESLER CORPORATION, 4053 Harlan Street, Emeryville, Oakland 8, California

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- BES-SPRAY Sprayers BES-BLO Attachments
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STATE _____

APRIL
VOL. 74

1954
No. 4

CONTENTS

Strawberries as a cash crop are increasing in popularity. Although acreage has declined somewhat, market conditions have been very favorable. Cover photograph by Gifford, Salem, Ore.

Letters to the Editor.....	10
Two-Crop Strawberry Production in Holland.....	13
By Hester G. Kronenberg	
Grow Better Strawberry Plants.....	14
By C. A. Reimer and J. H. Davidson	
Care and Repair of Your Garden Tractor.....	16
By Eldon S. Banta	
New Ideas in Mechanization.....	18
State News.....	20
Fruit Pest Handbook.....	20
Calendar of Coming Events.....	25
The Question Box.....	26
Nitrogen Sprays.....	27
Key Men Meet in Annual Peach Convention.....	29
By M. J. Dorsey	
What ANF Means to Growers.....	30
By James H. West	
Keep Up-To-Date on Strawberry Virus.....	32
Windfalls.....	34
Led by Henry Bailey Stevens	
Breeding Strawberries.....	38
By Julian C. Miller	
Garden Tractors Perform Varied Jobs.....	41
Mechanizing Berry Growing.....	42
A New Midseason Strawberry.....	44
Lightweight Mist Blower.....	45
Spraying to Prevent Runners.....	46
By R. F. Carlson	
The Orchard Home.....	53
Editorial Page.....	54

AMERICAN FRUIT GROWER

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AMERICAN FRUIT GROWER



Multi-purpose

"Black Leaf" 253

**produces
the most
clean fruit!**

You can't beat Black Leaf 253 as a general purpose cover spray for controlling destructive apple insect pests. Black Leaf 253 saves labor by simplifying summer spraying. Highly effective against major insect pests, it gives you bed-rock economy because it helps you get top yields of quality fruit. Many leading growers in major fruit areas use Black Leaf 253 consistently.

Black Leaf 253 controls many insects and mites that attack apples and other important fruit crops. It kills codling moth, red-banded leaf roller, leafhoppers, European red mite, two-spotted mite, pear psylla, San Jose scale and many other pests.

Dustless Black Leaf 253 is *Tobacco Base* "impregnated" with 25% of DDT and 3% of Parathion by an exclusive process. It's easy to use and compatible with standard spray materials. Just dump it in the water as the spray tank is being filled.

Black Leaf 253 provides long-lasting insect control with essentially no visible residue. Permits development of high-quality color and finish.

Simplify your cover sprays with Black Leaf 253, and profit by this highly satisfactory summer spray program. Get Black Leaf 253 now from your dealer, or write for full information and the name of the nearest supplier. Look for the Black Leaf on the red and white package.

VIRGINIA-CAROLINA CHEMICAL CORPORATION

BLACK LEAF PRODUCTS DIVISION

(formerly Tobacco By-Products & Chemical Corporation)

Richmond 8, Virginia

Sales Offices in 19 Cities

OTHER FAMOUS **Black Leaf** SPRAY MATERIALS

Aramite Emulsifiable

Aramite Wettable

Asenate of Lead

BHC Wettable

DDT Wettable

Dieldrin Wettable

Black Leaf 40®

Black Leaf 155

Chlordane Wettable

Forban Wettable

Lindane Wettable

Malathion Wettable

Parathion Wettable

Phygon® Wettable

T.D.E. Wettable

TEPP 40%

TEPP 20%

Many other pest control products also carry the reliable Black Leaf label—Insecticides, fungicides, weedicides and rodenticides. Ask for full information.

*T.M. of U.S. Rubber Co.

The "LEAF that protects the tree
is a

"Black Leaf" SPRAY

New INTERNATIONAL ONE HUNDRED!

newest, easiest-to-drive pickup in the lowest-priced field



INTERNATIONAL has done it! The new ONE HUNDRED is all farm truck, yet it handles more like an automobile. It's all INTERNATIONAL quality. And it's priced right down with the lowest!

Naturally, you'll have to drive it to believe all that! So take the ONE HUNDRED out on the road for a brand new experience in pickup truck performance. Test its steering ease—you'll find it turns with little effort at corners or when parking. Check its great new snap . . . finger-tip shifting . . . new get-up-and-go!

And when you own it, you'll get used to operating on a money-saving budget!

Next time you're in town, stop in for this eye-opening demonstration. Then start saving, with the low-cost farm truck that gives you a wholly new concept of pickup driving ease.

INTERNATIONAL HARVESTER COMPANY • CHICAGO



For those quick trips into town!



New all-farm truck economy!

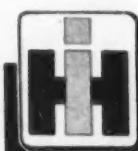


Easiest-to-drive pickup in lowest-priced field!

New experience in pickup performance. Industry's newest transmission. Outstanding new acceleration in second gear. New high-velocity manifolding gives better heat control for better performance and economy.

New 104 hp. Economy Silver Diamond engine. 3-ring high turbulence pistons. Short stroke design reduces friction. High compression performance on regular gas! More power to get farm work done, right now!

New steering that makes parking and turning a cinch! Comfo-Vision cab. Big curved one-piece Sweep-sight windshield. New soft-action springs. Soft-pedal clutch. New finger-tip shifting ease. Big, new brakes, with the largest effective lining area in the lowest-priced field!



International Harvester Builds McCORMICK® Farm Equipment and FARMALL® Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

Standard of the Highway™

FOR

5 YEARS

THE BEST FOR YOUR MONEY

CRAG FRUIT FUNGICIDE 341

Trade-Mark

a glyodin solution

CRAG glyodin solution is a proven fungicide. The same formulation of glyodin has been used for five years. It gives you the highest quality fruit at the lowest cost.

HERE'S WHY ▼

CRAG glyodin solution gives outstanding apple scab control. Apply ahead of scab infection periods for protection even under bad conditions. When in doubt about timing, use CRAG glyodin solution and liquid phenyl mercury—each at half dosage. Use this combination especially during prolonged intermittent wetting that makes it difficult to tell when infection periods start and stop. You'll get the long lasting protection of CRAG glyodin solution plus the "back action" of mercury—and you'll take the guess work out of early season spraying.



In your early season sprays use
CRAG glyodin solution or a combination of glyodin and mercury.

followed by **CRAG** glyodin solution

With CRAG glyodin solution you get higher yields and better quality fruit. And it often suppresses European red mites, thus saving the cost of additional mite sprays. More fruit—with better color and finish—means a lower production cost per bushel and a better price in the market.

Leading growers have switched to CRAG glyodin solution. When you use it you'll like it — Buy it and see!!!

CRAG FRUIT FUNGICIDE 341, Trade-Mark, a glyodin solution, is available at leading Orchard Supply Outlets.

in your cover sprays.



CARBIDE AND CARBON CHEMICALS COMPANY

A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

"Crag" is a registered trade-mark of Union Carbide and Carbon Corporation

Mightiest concentration of gas-saving power

per cubic inch...ever built into any truck engine line!

Only NEW FORD TRUCKS for '54 give you Gas-Saving, Low-Friction, High-Compression, Overhead-Valve, Deep-Block engines in all models! Power increased up to 23%! Friction reduced as much as 33%.

Concentrated power is gas-saving power! Why? Because the smaller the engine, the less gas it usually uses. Ford's new truck engines develop as much power as other engines *much larger* in size! How? With new high compression and overhead valves, they *burn gas better*. With new short-stroke design they *lose less power to engine friction*. And with new deep-block design increasing structural strength, Ford engines *run smoother*.

For more details, see your Ford Dealer, or write: Ford Division, Ford Motor Company, Dept. T-38, Box 658, Dearborn, Michigan.



NEW ULTRA-MODERN, HIGH-COMPRESSION POWER IN EVERY MODEL! You get the concentrated power of an ultra-modern Ford engine in over 220 truck models, from the smallest Pickup to the 60,000 lb. G.C.W. BIG JOBS. Only Ford offers a complete line of LOW-FRICTION, High-Compression, Overhead-Valve, Deep-Block engines.

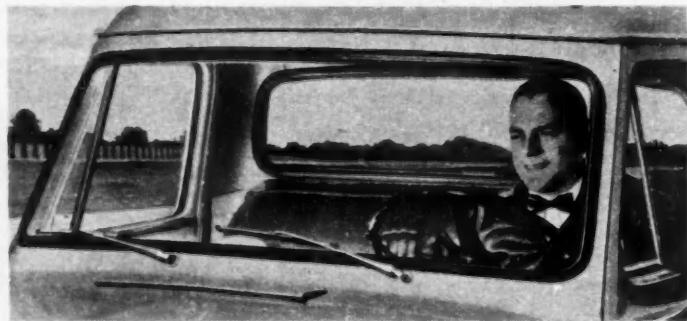
POWER CONCENTRATION IN FIVE FORD TRUCK ENGINES

Horse-power	Cubic Inch Displacement	Horsepower per cu. in.
Cost Clipper Six	223	0.515
Power King V-8	239	0.544
Power King V-8	256	0.539
Cargo King V-8	279	0.545
Cargo King V-8	317	0.536

NOW! More POWER PER CUBIC INCH! Only Ford develops over 0.50 horsepower per cubic inch in every engine. The 239-cu. in. Power King V-8 for instance, develops 130 h.p. from up to 43 cubic inches less than other-make engines.



1. NEW LOW-FRICTION ENGINES are built to give you direct savings in terms of lower gas, oil and maintenance costs. And just as important are indirect savings, like time saved by the extra power that helps get jobs done fast on the road or in tough farm going.



2. NEW 3-MAN DRIVERIZED CABS plus new driving controls like Power Steering, Power Brakes and Fordomatic Drive, save money by helping make driving safer and easier. Cabs have exclusive Ford seat shock snubbers. New woven plastic seat upholstery "breathes" like cloth. Big, curved one-piece windshield for visibility unlimited.

AMERICAN FRUIT GROWER



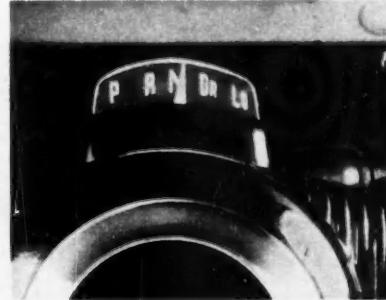
Sweetest handling trucks on the road. Ford BIG JOBS offer new Power Steering, new Driverized Cabs, many other features to help make truck driving easier.



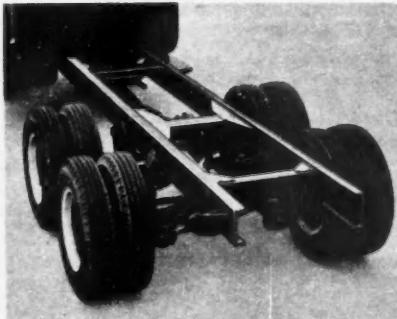
NEW POWER STEERING cuts steering effort as much as 75%. Ford Master-Guide Power Steering is standard on Series T-800 and is optional at extra cost on most other BIG JOBS.



NEW VACUUM BOOSTED POWER BRAKES now available on Ford half-tonners make stopping up to one-fourth easier.* Pressure needed to stop truck won't break ordinary light bulb.



NEW FORDOMATIC DRIVE in all light-duty Series. Fully automatic! No clutching! Ideal for off-road work: no engine-stalling at low wheel speeds.*



3. NEW GREATER CAPACITY! New factory-built 6-wheelers up to 60,000 lbs. G.C.W. Two new Cab Forward BIG JOBS. Each of over 220 Ford models has low curb weight, top payload.



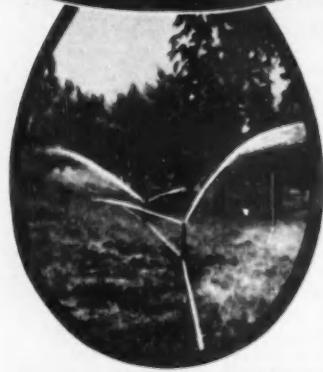
New 6½-ft. Ford Pickup now offers vacuum boosted Power Brakes and Fordomatic Drive at slight extra cost.*

FORD TRUCKS
TRIPLE ECONOMY
MORE TRUCK FOR YOUR MONEY

LETTERS TO THE EDITOR

...TO CUT COSTS
...TO BOOST YIELDS
AND  PROFIT

WADE RAIN
Sprinkler Irrigation



WADE RAIN CUTS Orchard Costs 4 Ways:

Healthier trees with better root structure—improved quality fruit... Wade Rain reaches every tree in the orchard.

1. Saves Expensive Manpower
2. Saves Ditching Time and Labor
3. Saves Water, Walking and Work
4. Eliminates Ditches—thus lowers cost of other orchard operations

Only WADE RAIN
has Self-Draining
"LOKS-IN"
Gasket

No Lifting Pipes full of water...
No "gadgets"...
No Holes to weaken Pipe.



MAIL TODAY FOR

MAKES
PLANNING EASY!

FREE
PLANNING
SERVICE
and "Farm-Facts"

Please send me free "Farm-Facts" Information Form and Illustrated Wade Rain Literature

Name.....

Address.....

City..... State..... W-25-4

Framework by Oblique-Side Method

Dear Editor:

I noticed in a recent issue of AMERICAN FRUIT GROWER a picture of a 10-year-old apple tree framework to a new variety. I thought you would be interested in the enclosed photograph, taken a year ago, of a 40-year-old Spy tree which has been framework by the oblique-side method to the Red Delicious



variety. This tree is one of more than 100 similarly treated trees and shows what can be done even on extremely large trees.

The owner, J. Cooper, Simcoe, Ontario, Canada, originally framework his Spy trees with Tolman Sweet grafts in order to overcome a pollination problem. He was so pleased with the outcome that he even framework Snow trees, a source of pollen, to the Spy variety. His production multiplied some 20 times following the introduction of the pollen variety, Tolman Sweet. The framework trees were in full production three years from the time the grafting was done.

Harrow, Ont., Canada T. B. Harrison

Likes Frost Prediction Articles

Dear Editor:

Every year you publish an article by Dr. Irving P. Krick on the frost and temperature predictions for the critical months ahead. These are interesting and useful articles, which I hope you continue to publish.

Barry, Ill. M. A. Koeller

Cold Storage Figures

Dear Editor:

I read your article on apples in the January Yearbook issue with much interest. But I could not help but note a discrepancy between the apple shippers storage figures and those available from the USDA. For example, on November 1, 1952, the USDA reported 26,844,000 bushels whereas the International Apple Association reported 44,206,000. On November 1, 1953, the USDA reported 27,588,000 and the IAA 38,402,000. Why is the

difference in figures so great from the two sources?

Henniker, N. H.

R. C. Coombs

Going back over the years, you will find that this discrepancy is about normal, according to Fred W. Burrows of the International Apple Association. The IAA can usually locate about 33 per cent more apples than does the USDA. This is because the USDA, by law, receives storage holdings from commercial storages only. The grower-owned cold storages are not forced to report their holdings to the USDA and in many cases are not even contacted. In the case of the IAA report, if a storage does not answer their mail inquiry then they wire that storage for the holdings, and if the wire is not answered then the IAA men phone and talk to the man personally.

Some of the difference, too, between the two reports may be accounted for by the fact that the IAA report covers common storages as well as refrigerated storages.—Ed.

Subscription Renewal in Rhyme

Dear Editor:

Your inviting letter all printed in rhymes
Weaken resistance in difficult times.
The reason for "lapsing," I wish you to know,
Is that business efforts in these parts are low,
Since neighbor state fruit with poor flavor
Is swamping our markets to dampen endeavor.
A bushel of apples sold at two bucks or less
Can barely buy us of goulash a mess.
(Which fact, of those boys, prompts me to
mention,

That by their own efforts they'll never get
pension.)

We're spraying against fungus diseases and
bugs,
We're pruning the trees, buying baskets and
lugs.

We have borers, hail, and Jack Frost as foe,
And more could I add to my story of woe.
But I come to remember "Fruit Grower's"
front page,
With apples and pears never shriveling with
age.

I like the readers' queries and hints,
The editor's comments, the interesting prints,
And sometimes I find there a newfangled tool
To make labor easier, not heard of in school.
And even though wanting in profit or gain,
Who loves horticulture has not lived in vain.
So, I've herewith decided without any tears,
To part with two singles for another four years.
Roselle, Ill. A. Schneebeli

Success with Strawberries

Dear Editor:

I am writing to let you know of the success I am having with my strawberries.

In the spring of 1951 I set out 200 plants, in six rows, in a plot 20 feet by 25 feet. In June of 1952 I picked 100 quarts, and in June of 1953 I harvested 200 quarts. Taking the latter rate into consideration, one acre would yield over 17,000 quarts.

I raise the Nectar King variety which I purchased from an Illinois nursery. It is a light red and has a perfect cone shape. Some of the early berries are quite large, but most are of medium size. The flavor is quite sweet. Nectar King also makes a good freezing berry.
Navarre, Ohio E. H. Swank

For Your PETAL FALL SPRAYS



...Get "O.B."

...give you the **RIGHT** product for **EVERY** pest problem!

For Scab:

- Ferbam Spray Powder
(organic fungicide containing 70% ferric dimethyl dithiocarbamate)
- Puratized Apple Spray (organic fungicides)
- Puratized Agricultural Spray (organic fungicides)
- Micro-Dritomic* Sulfur (sulfur fungicides)

For Codling Moth:

- Genitox* S-50 and S-75 Spray Powders
(contain 50% and 75% DDT)
- Lead Arsenate, Standard and Astringent
- Genithion* P-15 (contains 15% Parathion)
- Malathion 50% Emulsifiable Concentrate
- Malathion 25% Spray Powder

For Curculio:

- 50% Methoxychlor Spray Powder
- Genithion* P-15 Spray Powder
- Lead Arsenate, Standard and Astringent
- Dieldrin
- Malathion 50% Emulsifiable Concentrate
- Malathion 25% Spray Powder

For Aphids:

- Genithion* P-15 Spray Powder
- Nicotine Sulfate Solution
- TEPP (40%)
- Malathion 50% Emulsifiable Concentrate
- Malathion 25% Wettable Powder

For Red-banded Leaf Roller:

- 50% TDE (DDD) Spray Powder
- Lead Arsenate, Standard and Astringent
- Genithion* P-15 Spray Powder
- Malathion 50% Emulsifiable Concentrate
- Malathion 25% Spray Powder

For Mites:

- Genite* 883 Spray Powder
(p-chlorophenyl p-chlorobenzene 50%)
- Genithion* P-15
- Aramite
- Malathion 50% Emulsifiable Concentrate
- Malathion 25% Spray Powder

Available from Orchard Brand Dealers everywhere

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

*Reg. U. S. Pat. Off.

WHAT TO LOOK FOR IN A GOOD SPRAY MATERIAL

Q Will it pour freely from the bag?

A Poorly formulated spray powders will cake and lump and will not pass through the strainer of the sprayer. Carefully formulated material may become compressed in shipping but will "break-up" and wash through the strainer easily when filling the tank.

Q How about mixing?

A A carefully formulated material will mix easily with water and will stay suspended with normal agitation.

Q Will it spread evenly on foliage and fruit?

A Carefully formulated spray material will spread evenly over fruit and foliage, giving a complete protective cover.

Q What about sticking power?

A Good spray material will stick to foliage and fruit even during rainy weather. Poor material will wash off in the first rain.

Q . . . And control of pests or diseases?

A Carefully formulated spray material will have sufficient amount of the insect or disease controlling chemical to give effective control when label directions are followed.

Q Will it injure fruit or foliage?

A A carefully formulated spray material will not burn or injure foliage or fruit if used according to directions.

Uneven blending of the active ingredient in a spray material lowers its killing power and, in some cases, causes damage.

Spray material particles are so small that the naked eye cannot tell a poor job of formulation from a good one. It takes a high-power microscope to reveal the tiny particle variations that show how well a spray material will meet the qualities described above.

That's why it's wise to rely on the quality control rigidly carried out in General Chemical laboratories on all Orchard Brand Spray Materials.

**Use Orchard Brand Spray
Materials and
spray with confidence.**



**Why more efficient transportation costs less on an
"All-Chevrolet" Farm**

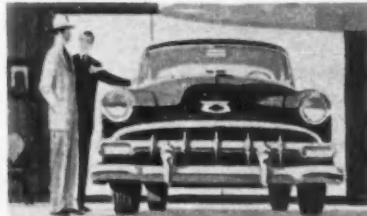
Getting your cars, trucks, parts and service from one specialized source saves you time—and money, too!
Here's an idea that just makes plain good sense any way you look at it. Consider all the ways you save when you rely on your Chevrolet dealer for *all* your farm transportation needs.

In the first place, the new Chevrolet cars and trucks he sells will save you plenty on operating costs. They bring you money-saving gasoline mileage in every model.

Your upkeep costs go down, too, when you go "All-Chevrolet." Repairs are mighty few and far between.

And when your car or truck does require service, or when you wish to buy replacement parts, you can get everything you need from one quick, convenient source—your Chevrolet dealer. He'll serve you better because he not only knows Chevrolet cars and trucks, but he also knows your farm needs.

In addition, with an "All-Chevrolet" farm, you enjoy the combined savings offered by America's lowest-priced line of cars and America's lowest-priced truck line. Why not plan to talk it over with your Chevrolet dealer soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



More things you want in the new Chevrolet for '54
You get new beauty outside and in—plus
new high-compression power and important
gasoline savings in all models.



Thrifty, dual-purpose Station Wagons
As handsome as they are handy! Seat
six with room to spare—and the rear
seat folds to give you extra load space.



The man who sells both gives both better service
Your Chevrolet dealer will keep your cars and trucks running like new. His trained
mechanics use Genuine Chevrolet Parts.

MORE PEOPLE BUY CHEVROLET CARS AND TRUCKS THAN ANY OTHER MAKE!

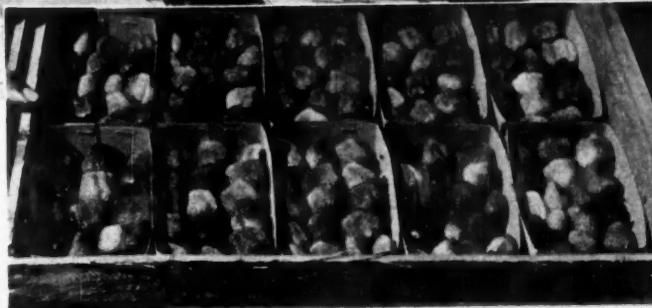


American Fruit Grower

• Fruit for Health •



Photograph above, courtesy Ministry of Agriculture, Fisheries, and Food at The Hague, shows strawberries under Dutch lights (sash), in single rows. The photograph shown at the right pictures a crate of autumn strawberries in the auction.



TWO-CROP STRAWBERRY PRODUCTION *in* HOLLAND

How the Dutch get large yields by utilizing the length-of-day principle

By HESTER G. KRONENBERG

STRAWBERRIES thrive very well in the Netherlands, and their culture is rather important. They are mainly grown in the open. In 1952 the area under strawberries covered 9,500 acres, and the total yield amounted to about 20,000 tons, a large part of which was processed.

About three per cent of the total area is forced under glass. To this end the plants are usually grown in cold frames under sash (Dutch lights). These are very low structures of concrete or wood, approximately one foot high, covered by sheets of glass fitted in wooden frames, the "lights" (2'8"x5'), sloping slightly towards the sunny side.

Whereas outdoor crops ripen in June, these "glass"-strawberries mature early in May. Sometimes the frames are heated, in which case the fruits mature

Dr. George M. Darrow of the USDA, who helped obtain this article by Dr. Kronenberg, has the following comments of interest to berry growers: "This article fits in with the short day effects I have seen in Central and South America, with the enormous production and yields per acre of strawberries along the coast of California, with the rock culture in Japan, with the very long season in Florida, the relatively long seasons in Louisiana and North Carolina, and with Prof. Parker's new practice with the Pocahontas variety at Norfolk, Va."

Readers will be interested to know that Dr. Kronenberg is a foremost Dutch strawberry specialist at the Institute of Tuinbouw, Wageningen, Holland.—Ed.

still earlier. These first fruits fetch fairly good prices. In 1952 about 250 acres (nearly 700,000 lights or sash) were grown in this way. The total production of these "glass"-strawberries amounted to about two and one-half million pounds, the average yield per light being in the neighborhood of three pounds; a large part of it is exported. Plants forced, in wooden boxes in hot-houses yield crops that will bear still earlier.

The strawberry season is not only extended by an early spring crop, but also by a second crop in the autumn. A fall crop can be picked from the old plants in the cold frames if they have been given a short-day treatment. This is done to some extent at Roelofarends-

veen, a village near Leyden, where nearly 10 per cent (or 15,000 lights) of the strawberry rows are handled in this way. Also in the Westland area, the glasshouse district south of The Hague, some 2,000 lights cover autumn strawberries. The most important forcing variety is still the 50-year-old Deutsch Evern (very early).

Several districts are well known for one-crop culture under Dutch lights. Usually the plants are set in beds the previous summer, in the early part of August (10 to 12 plants for each light). In autumn frames are built around the beds of strawberry plants. In January and February the frames are covered with lights. If this is done before winter

(Continued on page 36)

Grow Better

STRAWBERRY PLANTS

Dow Chemical's program increases
plant yields 60 to 150 per cent

By C. A. REIMER and J. H. DAVIDSON

The Dow Chemical Company

A NEW system of producing essentially nematode-free strawberry planting stock has been developed by agricultural research workers of The Dow Chemical Company.

The program is built around plant selection and soil fumigation. It greatly reduces those increasingly important soil pests, nematodes, and at the same time increases plant vigor and yields. It can be used for both foundation and first generation plants. Initial capital outlay is minor. Total costs are reasonable and profits or net returns per acre are attractive.

The nematode problem in recent years has become of increasing importance in the production of healthy, vigorous strawberry plants and also for the production of high yields of fruit. Nematodes attack the roots of many plants and frequently their presence is not detected until they become well established. The losses caused by nematodes have not been fully recognized due to their small size and the nature of the damage they cause. The presence of certain types of nematodes is frequently suspected only after the plants fail to respond to applications of fertilizer and other good cultural practices.

Several types of nematodes are now recognized as being plant pests. The most readily recognized is the root-knot nematode which causes knot-like swellings on the roots of infested plants. The root lesion and ectoparasitic types of nematodes, although not as readily seen by the casual observer, may be just as serious pests as the root-knot nematode. The failure of a crop following the growing of the same crop over a period of years on the same land has often been attributed to "sick" or "worn out" soil. Frequently the trouble has been caused by the build-up of plant parasitic nematodes.

These nematodes cause various types

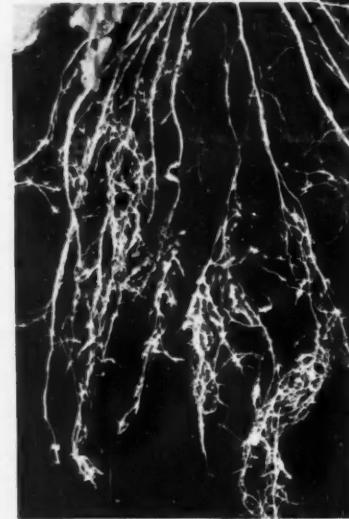
of root injuries that interfere with the normal uptake and translocation of essential plant nutrients and water. In some cases the damage caused by light infestations of nematodes can be somewhat alleviated by the application of additional fertilizer and water. Under conditions of a heavy nematode infestation little benefit will be derived from such practices.

Damage by nematodes may involve an entire field in extreme cases but generally the damage shows up as irregular areas scattered throughout the field. When an entire field is affected it indicates that the nematode infestation is of long standing and the field has been repeatedly planted with nematode-susceptible crops. Strawberry plants are seldom killed except under situations of high nematode populations accompanied by adverse growing conditions.

During the last decade considerable progress has been made in the application of volatile chemicals as soil fumigants for the control of soil-borne plant pests. The successful use of certain of these soil fumigants for nematode control on land used for other crops naturally suggests their use for strawberries.

Strawberry growers are particularly vulnerable to the nematode problem due to the practice of obtaining new plants or moving plants from one location to another for establishing new plantings. Growers should, therefore, become familiar with nematode injury and if possible obtain good plants and set them in treated soil to reduce the damage from nematodes. A suggested program to be followed is outlined below.

There are two problems facing the strawberry grower or nurseryman if he is to produce plants relatively free of nematodes. First, it is necessary to have a source of clean plants to use as "moth-



Roots of strawberry plant infested with root-knot nematodes. Notice knot-like swellings.

er" plants, and, second, the ground in which the plants are set should be relatively free of plant parasitic nematodes.

The method of producing foundation stock plants involves 1) growing the mother plants in cans, 2) fumigating a plant bed to kill nematodes, and 3) setting the cans on the fumigated bed where the runners produced will grow over the edge of the can and root in treated soil.

Gallon or No. 3 tall cans (four and

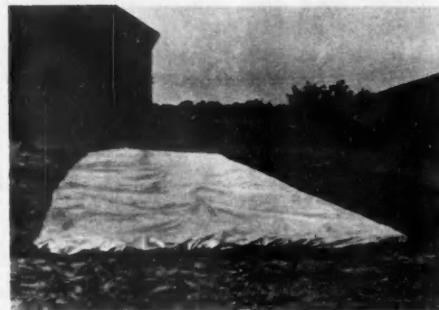
AMERICAN FRUIT GROWER



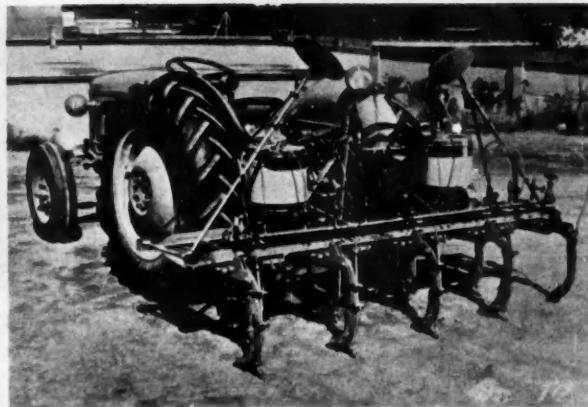
Roots of a strawberry plant which are free of the root-knot nematode.



The strawberry plants shown on the right are growing in soil which has been treated with W-85 at the rate of nine gallons per acre. The plants shown at the left are growing in soil which is untreated.



Above—Plastic cover over selected plant bed site after release of MC-2 under the cover. Experiments have shown that MC-2 kills nematodes, insects, and most weeds.



Right—A chisel-type soil fumigation applicator mounted on a tractor which is used in spraying strawberry plants.

one-half inches by seven inches high) may be used for these plants. The gallon can is better because the soil will not dry out as fast but it is bulky, difficult to handle, and requires more soil. The tall cans work well if watered frequently and kept shaded to protect the plants from high temperatures and the direct sun. The cans should not have any holes and care should be exercised to prevent contamination of the treated soil outside the cans. The soil used in the cans should be sifted and fortified with a commercial fertilizer.

The cans are partially filled with soil and the strawberry plant inserted. The soil should be well packed around the roots. An inch space at the top helps avoid run-off when the cans are watered or during rains thus preventing contamination of the soil surrounding the cans. Heavy rains may result in unavoidable contamination.

It is important that the cans be in a partially shaded area and watered often until the plants become well established. An additional application of liquid foliar fertilizer may help improve early plant growth. Odorized methyl

bromide¹-treated soil for use in the cans has not proved satisfactory in tests to date, apparently due to poor drainage and aeration or possibly to a nutrient imbalance. In selecting the initial plants every attempt should be made to obtain plants free of virus and other diseases.

While the plants in the cans are becoming established and as soon as the soil temperature reaches 50° F. or above, a well-drained, easily tilled area should be selected for the plant bed and treated with one pound of MC-2 per 100 square feet. This material is normally a gas but is available in various sized containers as a liquid under pressure.

A gasproof cover is placed on the selected site and the gas is released under the cover. Instructions for laying the cover and the application are supplied by the manufacturers. It is essential that the cover be gas proof and the edges sealed down with soil.

The cover should be allowed to remain undisturbed for 36 hours or more and then carefully removed, making sure that all untreated soil remains on the outside of the treated area. An interval of at least seven to 10 days should elapse before placing the cans containing the strawberry plants in this area. If cool, wet weather prevails during this period the interval should be extended to 14 days. During this time it is advisable to work the area, which will aid in the aeration of the soil. Tools used for this purpose should be cleaned to prevent contamination from other soils.

The cans containing the plants are placed in the treated area with the aid of a posthole digger. Placing the cans in the ground to a depth of four or five inches reduces the possibility of drying and overheating of the roots. The plants should be watered often and fertilizer used if necessary. The plants in the cans will produce runners which in turn will form plants in the previously treated soil outside of the cans.

¹Dowfume MC-2 (methyl bromide containing two percent chloropicrin.)

(Continued on page 39)



CARE AND REPAIR OF YOUR GARDEN TRACTOR

It's not hard to keep your garden tractor in top running condition

By ELDON S. BANTA

ANY internal combustion engine that has compression, fuel mixture, and spark at the proper time has to run. That goes for the smallest garden tractor as well as the big farm tractors.

If your garden tractor engine is hard to start, or does not start, or does not run smoothly, or loses power, then you better start looking for a cause. A few minutes spent in proper investigation of the trouble will do a much better job of solving the problem than an hour's cranking and swearing. It doesn't take nearly so much breath either, and in addition your wife will think you a decent person to live with.

"But where do I start looking for the cause?" First, you must identify the trouble. Is it lack of spark? Lack of fuel? Lack of compression? Once you have your trouble cornered in one of these areas, then it is a matter of correcting the specific cause or causes. We want to show you some ways to go about diagnosing your garden tractor engine troubles.

Be sure to obtain and keep in a safe place the instruction manual for care and upkeep of your engine.

Clean it and adjust points to proper gap as directed in your instruction book. Some growers adopt the practice of installing a new plug once a season.

Attach a wire from magneto and lay plug on top of cylinder head so it is well grounded. Turn engine over slowly and watch for spark between points. If spark is weak and shows yellowish red, then you can look for trouble in magneto. However, check the wire from magneto to plug to see that it is well insulated and that both ends are securely fastened to the wire and make good contacts.

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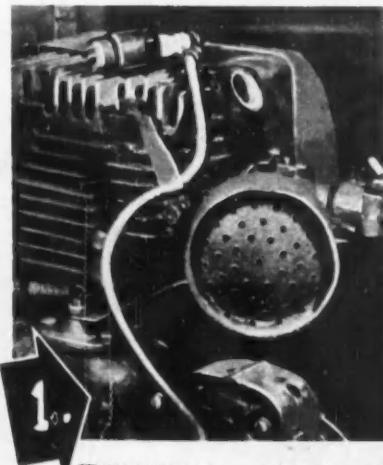
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starter rope slowly, watching the breaker points separate then snap together. They should fit together firmly and evenly. When breaker points are open see if they are smooth or burned or pitted. If badly damaged, replace them with new ones. Slight burning can be corrected with a breaker point file. Adjust gap between points according to directions. This is important.

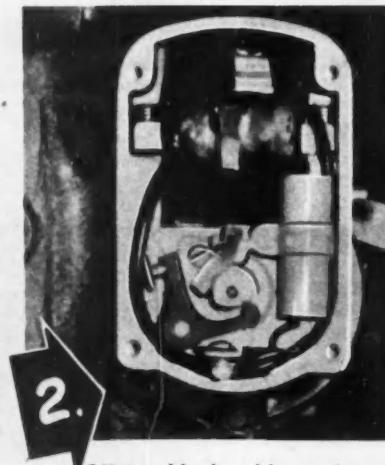
If, after proper attention to breaker points, the spark is still weak or non-existent, the trouble is probably a weak or burned out condenser. Remove condenser and check it on a leakage tester at your local garage. Take it and magneto cover with you and have both checked. If either condenser or cap are bad, replace with new ones. It is a good idea to put in new points when you install a new condenser.

If magneto is removed from engine, then when re-installed you must make sure it is properly timed. Your instruction book will tell how to do this. Ordinarily you will not have to remove it.

A drop of oil placed on the felt pad touching rotor in magneto once a year is all the lubrication necessary.

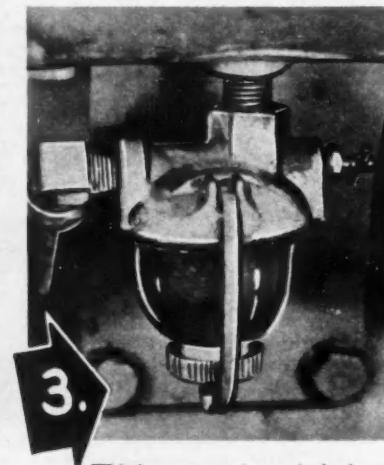


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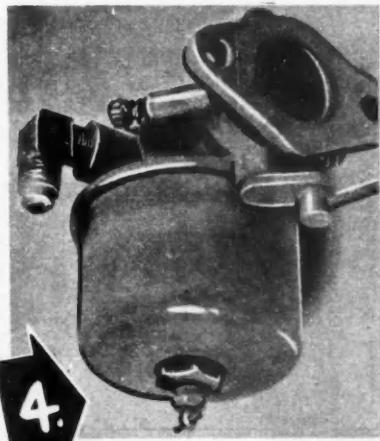
that line is open. Make sure that shut-off valve at tank works properly and is not clogged with dirt. Also check the tiny air hole in gas cap which must be open.

Perhaps you may find the ignition system good but still the engine won't start or is hard to start. In this case examine spark plug again. If wet, trouble is flooding. If dry, replace it. Then pull engine over several times at full choke and remove plug and examine. If still dry, then no fuel is passing through carburetor into cylinder.

Remove carburetor from engine and disassemble. Check float valve first. A float may develop a leak and will not shut off the valve so that gasoline floods cylinder. Or float may be adjusted too low and will not shut off the valve completely when carburetor chamber is full of gasoline. The same flooding develops. A frequent trouble is a gum ring which develops around the float valve and does not let it seat tightly. This will cause flooding, too.

Flooding trouble should be fixed promptly since gasoline entering the cylinder when engine is idle will trickle down around piston, will remove oil from the rings, and then will dilute the oil in crankcase. Damage to engine will result.

The float may be adjusted too high. In this case the engine uses up fuel and does not lower gasoline level enough in carburetor chamber for float to open valve before engine stops. Or, float valve may be gummed shut so no gasoline gets into fuel mixing chamber.



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OTHER carburetor troubles may be gumming shut of one or more of the fine jets that are essential to the proper functioning of carburetor. Once you have carburetor apart it is best to clean it properly.

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remove parts and rinse in kerosene, as the cleaning solution is corrosive and will damage parts.

Dry each part with a compressed air hose. This will remove any dirt that may have lodged during cleaning and rinsing.

Reassemble carburetor with new gaskets. Attach to engine and adjust high speed needle valve and idle adjustment according to your instruction book.

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Remember that the spark plug can give you two evidences of trouble in the fuel system. If plug points are wet it is an indication of flooding. If plug points are dry after turning over motor several times at full choke, it is an indication of failure of the carburetor to supply gasoline.



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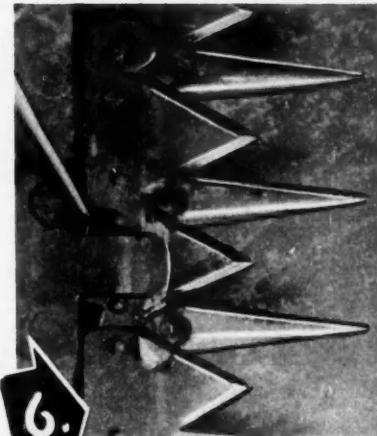
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While you are tending valves, you may remove piston and inspect rings.

It may be necessary to install new rings and ream out valve guides. Again, follow instruction book for procedure with your particular engine.



6.

OF all the attachments that go with your garden tractor, the mower, be it reel or sickle bar type, has the most wearing parts and needs the most attention.

To replace worn sickle sections, place sickle firmly in a vise, then drive section loose with a hammer. This will shear rivets. In a matter of minutes several worn or damaged sickle sections can be removed and replaced.

Be sure to replace ledger plates when serrations are worn smooth. Also clips need adjustment occasionally, especially when wearing plate is replaced or a new sickle is installed. Oil wearing surfaces frequently and parts will last longer. A sickle held firmly in place but not tight will do a better job of cutting than one held loosely.

Final Advice

Let us remember that the garden tractor engine is a small power unit, situated close to the ground and so often operates in a cloud of dust and dirt. For best service a garden tractor must be as rugged as possible, but at best there are certain delicate parts to it. These must always be protected because a slight maladjustment may mean a tractor that doesn't run.

The spark plug gives the final ignition that sets your engine in motion. Begin here and trace back for almost any starting or running troubles. Once you have gone through a diagnostic procedure with your tractor you may in later troubles be able to identify the difficulty quickly and fix it. Familiarity with your tractor can tell you many things.

The engine should be kept as clean as possible, oil changed frequently, and air cleaner to the fuel line cleaned every day the tractor is operated under dirty conditions. In other words, practice preventive maintenance. THE END



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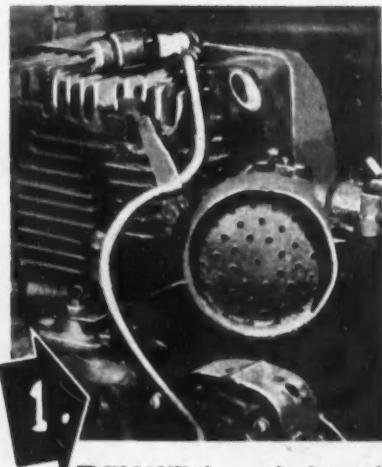
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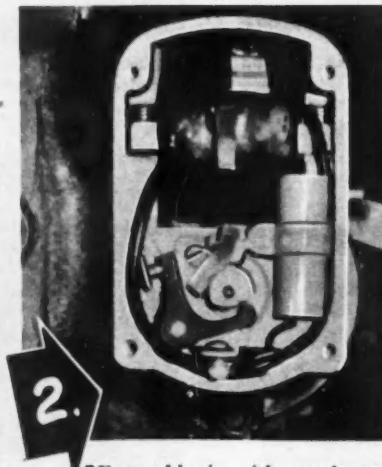
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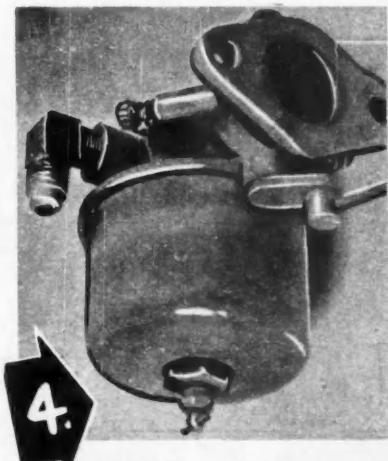
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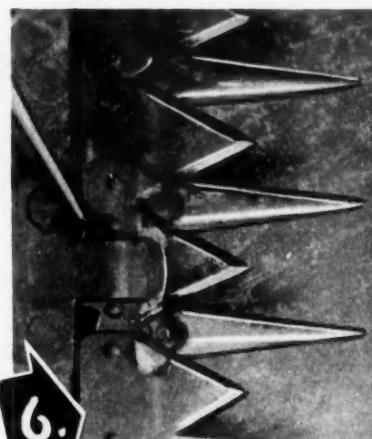
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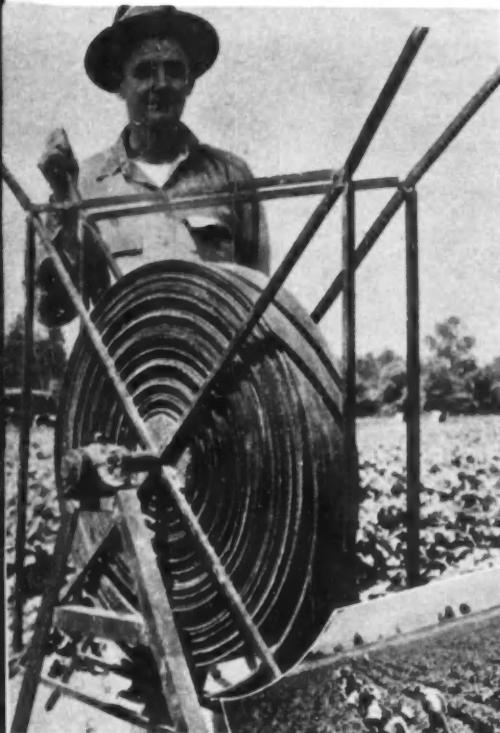
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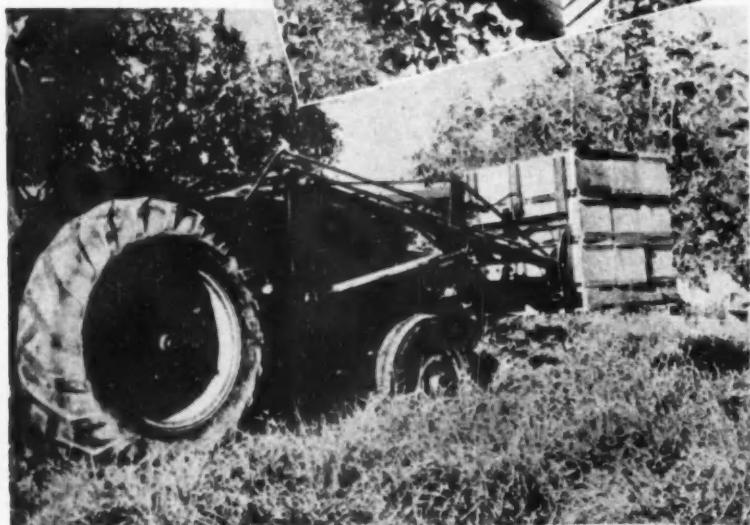
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Four-inch belt
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Photos courtesy Western
Canner and Packer

Pickers place berries directly on belt which discharges into cannery bins. Belt is powered by 1½ hp gas engine.



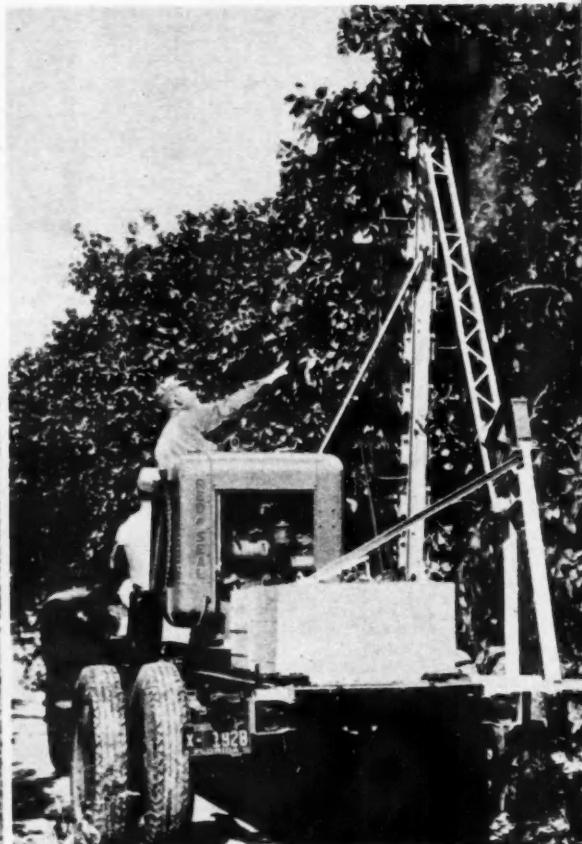
William Ravenscroft, manager, Avalon Farms, Bantam, Conn., uses three of these tractor-mounted forklifts for moving his fruit out of the orchard on pallets, thus saving time and labor and minimizing damage to fruit.—Arthur C. Bobb.

18



Strawberry belt conveyor, developed by James F. McCleny, operator of Anacortes Frozen Foods, Anacortes, Wash., uses 40 per cent less pickers than by old-time hard work and reduces waste in the field. Photo shows conveyor system being moved to new row by picking crew.

New Ideas in MECHANIZATION



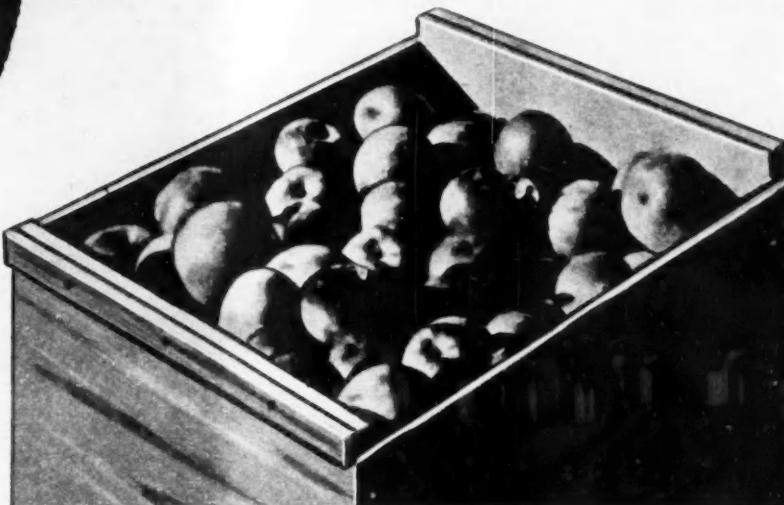
This hedging machine, developed by Florida Citrus Experiment Station, prunes a citrus grove about 10 times as fast as an equal number of men using hand shears. It consists of a column of 12-inch circular saws mounted vertically.

AMERICAN FRUIT GROWER



more
sales dollars
for you!

more high-grade
fruit with
ARAMITE®!



Before mites strike, be prepared with Aramite, today's safest strongest mite-killer—be prepared for higher yields of high-grade apples and peaches—hence more money at market-time.

Aramite gives outstanding control of European Red Mite, Pacific Mite, Two-Spotted Mite and Clover Mite. Agricultural authorities throughout the country enthusiastically report new Aramite

achievements with deciduous fruit, year after year.

Aramite-Sulfur Compatibility Among Its Advantages. All-inclusive tests prove that Aramite works very well with sulfur as with most other insecticides. In addition, Aramite is extremely easy to apply, is harmless to mite-killing insects and its long residual effect saves you reapplication costs.

Order Aramite or formulations containing Aramite from your local supplier today and watch your profits grow.



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Division of United States Rubber Company
ELM STREET, NAUGATUCK, CONNECTICUT

producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MN, Alsnap.

State NEWS

• Nation's Growers Challenged to Adjust Critical Truck Tax Problem • Much Interest in Peach Thinning Sprays

NEW HAMPSHIRE—The Stevenson Memorial Gold Medal was awarded to Dr. A. F. Yeager, head of the department of horticulture, University of New Hampshire, on February 18 at the Manitoba Horticultural Association convention at Winnipeg, Manitoba, Canada. The Stevenson medal was instituted in memory of the late A. P. Stevenson of Pine Grove Nursery, Morden, Manitoba. It is awarded to individuals for conspicuous achievement in the field of practical horticulture. Many of the hardy varieties developed by Dr. Yeager have been introduced successfully into Canadian prairie areas.

The New Hampshire Plant Growers' Association recently held its second annual meeting at the University of New Hampshire. This new association is composed of New Hampshire nurserymen, florists, box plant growers, and seedsmen. The group voted to issue a map of New Hampshire showing location of members offering nursery stock, seeds, and plants for sale. A true-to-name and freedom from disease certification plan was endorsed by the organization. One of the objects of this plan is to aid in national sales of some of the new plant introductions developed by the University of New Hampshire.—E. J. Rasmussen, Sec'y, Durham.

VIRGINIA—Virginia fruit growers along with other Virginia farmers have been engaged in a bitter battle to preserve reciprocity in truck taxes between states. We agree that highway users should pay for the use of our highways, but some procedure should be worked out among the states to do this without erecting trade barriers at state lines. Virginia fruit growers challenge the fruit growers of every state to work on this very important problem that threatens to strangle our use of trucks in transporting our fruit from one state to another.

J. Kenneth Robinson, president of Virginia State Horticultural Society, spoke at the All-Virginia Public Relations Conference in Richmond on March 25. He has also been invited to speak on the program of the Virginia State Chamber of Commerce 30th annual meeting on April 9. His subject, "Marketing—A Major Problem."—John Watson, Sec'y, Staunton.

CONNECTICUT—Two weeks of spring weather gave growers an excellent opportunity to prune their apple orchards. Then zoom! Zero weather descended on us. What the outcome of peach buds will be is anyone's guess.

R. S. Dillon, Jr., Hancock, Md., gave an inspiring talk to Connecticut growers at a recent meeting in New Haven. As one grower remarked—"Dillon makes me think of the times I heard the late J. H. Hale."

"A Living on Four Acres," Joseph Teeling of Middleboro, Mass., does just that with strawberries. He told a small fruits meeting at Portland, Conn., about it and stated that ever-bearing strawberries can be profitable but since they bear over a long period, picking is an expensive job.—S. P. Hollister, Sec'y, Storrs.

growers' associations were held during February and March with Prof. George Klingbeil, extension fruit specialist, and H. J. Rahmlow, secretary, Wisconsin State Horticultural Society, as speakers. The movie, "Gateway to Health," was shown at all the meetings and drew applause wherever shown.

Most of the county associations voted funds to help the Wisconsin Apple Institute in its apple promotion program. They also voted to join in a State Apple Dessert Contest to be held during August and September of this year. Each county will hold a local contest and the winners will take part in the state contest. The recipes used by all the winners will be featured in local newspapers and over TV and radio.—H. J. Rahmlow, Sec'y, Madison.

ILLINOIS—Mark June 2 on your calendar. That's Summer Orchard Day, to be held at the Harvey Hartline Farm, south of Carbondale. A mammoth display of equipment, machinery, and supplies is planned along with other items of interest to Illinois orchardists, including a lunch.—Harold J. Harley, Sec'y, Carbondale.

IDAHO—Unseasonably mild weather and the

fact that Miss Idaho (Jane Bostic, New Plymouth) would be on hand to give the address of welcome brought out over 350 fruit growers on time to the recent 59th annual meeting of the Idaho State Horticultural Society in Boise. Miss Idaho told of her experience at the Miss America contest. She mentioned the fact that she had no products from her state to give out as souvenirs, such as apples or even potatoes.

We will correct that next year! Perhaps some of the other states missed a chance to advertise fruit when their states sent contestants to Atlantic City.

Training Delicious apple trees for better spread, by Leif Verner, University of Idaho, was a topic that resulted in considerable interest. Dr. Verner illustrated by slides and presented data showing that wider crotch angles resulted from suppressing rather than from removing intercrown growth.

Resolutions adopted numbered 12. The most interesting was Resolution No. VIII requesting that the bill before the House giving farmers a tax deduction for expenses incurred in soil conservation practices be amended to include cost of fruit-bearing trees planted, since they bring

(Continued on page 22)

FRUIT PEST HANDBOOK

(THIRTY-SECOND OF A SERIES)

PLUM CURCULIO

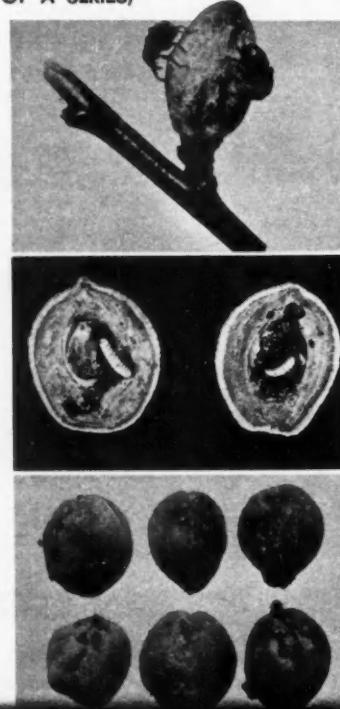
THE plum curculio is a common and one of the most serious pests of peaches, plums, cherries, and apples in the states east of the Rocky Mountains. The fruit is scarred and distorted by the feeding and egg-laying punctures of the adult curculios and the pulp is injured by the burrowing and feeding of the grubs. In the absence of treatment half of the fruit or more may be injured. In addition, the injuries made by the curculio furnish a place of entrance for the brown rot fungus, the most serious disease of peaches, cherries, and plums. Much of the fruit injured early in the season soon falls from the trees.

The adult curculios are small, hump-backed, brownish snout beetles, mottled with gray. They are about one-fourth inch long and spend the winter in protected places on the ground in and near orchards. They become active in the spring about the time peach trees are in bloom or little later and feed for a time on the leaves and bloom. They are most abundant in the outer rows of trees at first, later spreading throughout the orchard.

The overwintering adults attack the fruit soon after it sets and continue their attack intensively for about three weeks. First-generation adults attack peaches at or near harvest and later feed on fruit and foliage of various host fruits until they go into hibernation.

(Continued on page 50)

Photos show plum curculios on young peaches, peaches cut open to show larvae and damage, and damaged fruit.



Courtesy USDA

AMERICAN FRUIT GROWER



PUBLIC ACCEPTS BUFFALO TURBINE

As Modern Equipment for Concentrate Spraying and Dusting

Summer and winter meetings of the horticultural societies have again stressed the advantages of concentrate spraying. The Buffalo Turbine Agricultural Equipment Company, who is the pioneer in concentrate and air blast spraying, has spent nine years in perfecting their sprayer-duster. The Buffalo Turbine is truly an all-purpose unit. It will distribute dust or liquid insecticides and fungicides and will apply both at the same time or separately. It will give you more rapid coverage with less material. The axial-flow blower sets up an air turbulence which atomizes spray or dust, giving greater penetration.

YOU CAN SAVE MONEY WITH A BUFFALO TURBINE

- YOU SAVE ON INITIAL COST
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A South Carolina tobacco grower reports that he replaced 19 conventional sprayers and dusters with one Buffalo Turbine treating over 1000 acres and harvested an almost 100% insect- and fungus-free crop. (Name upon request.)

There is a Buffalo Turbine that fits your needs. Fill out the coupon and let us send you additional facts about this modern applicator.

Prices start at less than \$1000.00
Available in following models:

- JEEP POWER TAKE OFF
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- THREE POINT HYDRAULIC PICK UP MODEL

CUT ON DOTTED LINE AND PASTE ON POSTCARD OR MAIL IN ENVELOPE

Gentlemen—Please send me full information on
the Buffalo Turbine Sprayer-Duster.

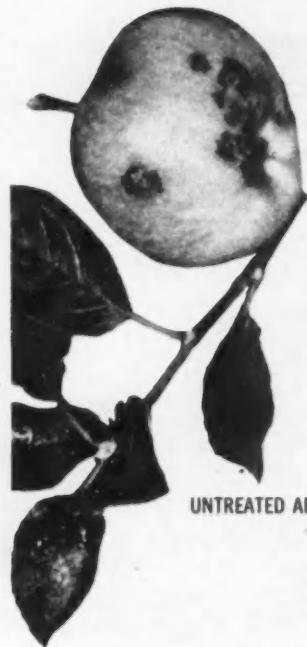
I have approximately _____ acres in fruit consisting
mostly of _____

Signed _____

Please arrange a demonstration.

BUFFALO TURBINE
AGRICULTURAL EQUIPMENT CO.
INC.
GOWANDA, NEW YORK

More and better apples and peaches with PHYGON-XL!



UNTREATED APPLES



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THE ORCHARD FUNGICIDE

Bushels of extra dollars for you!

It costs but a few cents per tree to apply Phygon-XL, for it's the *least expensive organic fungicide* you can use. But more important, you'll market far more "1 apples for far greater profits. Phygon-treated apples ripen more uniformly. You'll have fewer "rejects" because Phygon-XL, when properly applied, gives you almost 100% apple scab control.

Besides apple scab, Phygon-XL effectively controls bitter rot of apples and peaches, California blight of peaches, brown rot and blossom blight of peaches, peach leaf curl and many other fungus diseases. Phygon-XL is simple to apply. It mixes effectively with the most commonly used fungicides and insecticides, is harmless to pollen and bees and does not affect odor or flavor of the fruit.

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Idaho State Horticultural Society elected new officers during its recent annual meeting. Shown above, from left, are: Tony Horn, Boise, re-elected secretary-treasurer; Ernest Faison, Caldwell, past president; Robert Tucker, Emmett, president for 1954; Warren Carnefix, Fruita, vice-president; Albert Paulson, Wilder, immediate past president.

STATE NEWS

(Continued from Page 20)

no return for several years thereafter. The film, "Gateway to Health," was shown during the meeting.

Our winter has been mild with very little snow. Nursery stock is coming in and quite a few trees of red sports of Delicious, Jonathan, and Rome Beauty are being set out. A strawberry certification meeting was held March 9 in Emmett. Idaho plant growers have some nice registered Marshall plants for sale. These plants are from indexed stock.—*Anton S. Horn, Sec'y, Boise.*

NEW JERSEY—The month of February was exceptionally warm and peach and blueberry buds advanced rapidly. First week of March the temperature dropped to 10-20° F. Delayed dormant peach sprays are going on rapidly.

As a result of the warm February, pruning is well along. Brush shredding of one kind or another is becoming a common practice in orchards. Blueberry growers are also interested in shredding the prunings and several are doing this.

We have recommended that apple growers be sure to apply fertilizer well ahead of bloom to insure best possible fruit set. Many growers are wondering about the advisability of using thinning sprays this year.

Buds may be weak as a result of the dry weather and we expect a lighter apple crop than last year. Peach crop prospects look good at present.—*Ernest G. Christ, Sec'y, New Brunswick.*

SOUTH DAKOTA—The annual meeting of South Dakota State Horticultural Society and affiliated State Federation of Garden Clubs will be held in Dell Rapids on June 8-10. These joint meetings have been held for a number of years, to the benefit of both organizations. During the coming June convention the John Robertson gold medal, usually awarded to one individual each year for meritorious work in horticulture, will be awarded to two men.

A long-time member of the hort society, George W. Hall, died recently in California.—*W. A. Simmons, Sec'y, Sioux Falls.*

WEST VIRGINIA—Production and marketing problems involving apples, peaches, and cherries were discussed during the three-day convention of the West Virginia Horticultural Society in Martinsburg, February 11-13.

A major highlight was a half-day program on nationwide marketing of apples. Harold Copple, secretary-manager of the Washington State Apple Commission, and L. W. Marvin, manager of the New York-New England Apple Institute, described in some detail the functions of their organizations. Carroll R. Miller, secretary-manager of Appalachian Apple Service, brought in the work of this important marketing agency in the central east production area.

Copple pointed out that apple promotion programs seem always to be born of desperation, whereas this field should be a part of our production program year in and year out.

Marvin described the various ways his organization is using radio and TV programs to move northeastern apples. Miller emphasized that through adequate and proper promotional work apple growers can maintain the more advantageous sellers' market.

Discussions of spray materials, spray programs, and their effect upon tree growth and fruit yield made up the biggest section of the program. Dr. Edwin Gould, superintendent of University Experiment Farm, Kearneysville, W. Va., described the spray programs for apples, peaches, and cherries. Of exceptional interest to growers was his report of the success the past two seasons with a captan-lead arsenate program on apples. Diseases and insects were well controlled, trees made the best growth, and yields of fruit had better finish than any others in the orchard. Sulfur is being replaced in the spray program by captan this year. Brand names of captan are Orthocide, manufactured by California Spray-Chemical Corp., and Stauffer Captan, made by Stauffer Chemical Company.

Complete mouse control by the use of two and one-half pounds of Endrin per acre was obtained in some of his experiments, Dr. Frank Horsfall of V. P. I., Blacksburg, told the growers. This seems one of the most promising orchard mouse control methods yet developed.



Big Three in apple promotion discuss merits of a West Virginia Delicious at recent meeting of West Virginia State Horticultural Society in Martinsburg. From left: Harold Copple, secretary-manager, Washington State Apple Commission; Carroll R. Miller, secretary-manager, Appalachian Apple Service; and L. W. Marvin, manager, New York-New England Apple Institute.

Officers elected for the year are: A. Tom Machemer, Three Churches, president; Douglas W. Miller, Gerardstown, first vice-president; M. M. Brown, Martinsburg, treasurer; and C. R. Miller, Martinsburg, secretary.

MICHIGAN—The outlook for the state's fruit industry in 1954 appears to be very favorable at this time. The past winter has not been severe enough to cause winter injury to buds or wood. Fresh and processed fruits are moving out of storage at favorable rates.

Growers have had excellent weather for pruning and orchards generally have the appearance of good care. Heavier pruning practices have been stimulated by the adoption of air-blast spraying and the desire to use concentrated mixtures. Most growers are staying within the range of 2x to 4x.

Growers in Michigan are very much interested in the use of chloro-IPC for thinning peaches. The work of C. A. Langer in 1953 indicates that 400 to 500 p.p.m. would give commercial thinning when applied from shuck-fall up to 30 days after full bloom. He is suggesting that Michigan growers try it in a limited way in 1954 to see if it fits their needs.—Arthur E. Mitchell, East Lansing.

OHIO—The 107th annual meeting of the Ohio State Horticultural Society was held in the Commodore Perry Hotel, Toledo, February 3-5.

Pest control always comes high on the Ohio agenda. Dr. C. R. Cutright of the Ohio Experiment Station told of codling moth resistance to DDT in some Ohio orchards and that parathion and other new materials will have to be used in

(Continued on next page)

APRIL, 1954

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Gentlemen: Please send me my free copy of "What you should know about Portable Sprinkler Irrigation" and name of nearest SHUR-RANE dealer.

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Why gamble with "ol' man weather" or "make shift" irrigation? Investigate... mail the coupon below for a factual and authoritative booklet on portable sprinkler irrigation.



B. Franklin Ditsch, Edgerton, retiring president of Ohio State Horticultural Society (left), hands gavel over to newly-elected president Albert J. Livezey, Barnsville. Other officers elected during recent meeting in Columbus include J. B. Lane, Xenia, first vice-president; Al Liann, Port Clinton, second vice-president; Jerome Hull, Canfield, trustee; I. P. Lewis, New Waterford, treasurer; and C. W. Ellwood, Wooster, secretary.

STATE NEWS

(Continued from Page 23)

such orchards for codling moth control. Two new materials mentioned were Ryanicide and Diazanone, but they have not yet been sufficiently tested to recommend them for use.

Cultural practices were given both a scientific and a practical approach. Dr. F. S. Howlett, head of Ohio's department of horticulture, discussed just how water functions in fruit tree growth and fruit production, what happens when it is limited, and pointed out some ways of conserving orchard soil moisture. Growers C. E. Dutton of Milford Center, Al Liann of Port Clinton, and Bernard Mumma of Dayton presented the practical side of irrigation. They have been following this practice for a number of years with considerable success. This was especially true last season.

Karl Michener of Burton City, Ohio, an expert on the culture and growth of strawberries, died on February 17, at the age of 71. Mr. Michener developed the spaced-plant, sawdust-mulch system of growing everbearing varieties of strawberries.

Two young fruit growers presented their methods of fruit growing. Arnold Schaeffer, Jr., of Sparta, Mich., discussed his cultural program and William Braman of Greenville, Mich., his storage and handling program. Braman pointed out that when he mechanized his handling of apples by the use of pallets and forklift trucks he was able to save five cents a box over hand methods.

Another young grower, Rollin B. Cockley of Lexington, told his fellow Ohio growers how he got started in this business of fruit growing. He is following the practice of diversification as a kind of insurance and is producing peaches, apples, raspberries, strawberries, and vegetables on about 160 acres. He hopes to expand this acreage.

Experiences with new brush chippers and choppers were discussed by Ohio growers Albert J. Livezey, Barnsville; Herbert Chamberlain, McArthur; and J. B. Lane, Xenia. All are satisfied with the jobs done.

Some ideas on prepackaging of apples were projected by a panel consisting of Ohio growers Howard M. Wells, Wilkesville; M. W. Baker, Morrow, and H. W. Lutz, Carroll, and Mark Annis, buyer for A&P stores in the Toledo area. Consensus of opinion was that packaging apples in film bags is to be a continuing and growing practice and that to supply the big markets will require large quantities of specific varieties and grades of fruit. Since this may prove to be a problem in some areas it may be practicable for a few growers to specialize in prepackaging equipment and handle large vol-

CALENDAR OF COMING MEETINGS AND EXHIBITS

Apr. 7—Home Horticultural Day, University of New Hampshire, Durham. Program includes topics of interest to the home gardener, not the commercial fruit grower.

Apr. 29-30—Annual Shenandoah Apple Blossom Festival, Winchester, Va. Festival headquarters, 100 E. Piccadilly St., Winchester.

June 2—Illinois State Horticultural Society summer orchard day, Harvey Hartline Farm, Carbondale.—Harold J. Hartley, Sec'y, Carbondale.

June 8-10—South Dakota State Horticultural Society annual meeting in joint convention with affiliated State Federation of Garden Clubs, Dell Rapids.—W. A. Simmons, Sec'y, Sioux Falls.

June 17-19—National Apple Institute annual meeting, Niagara Falls, N. Y.—Truman Nold, Sec'y, 726 Jackson Place, Washington 6, D. C.

June 18—Small Fruits Day, Ohio Agricultural Experiment Station, Wooster.—C. W. Ellwood, Dept. of Hort., Wooster.

July 21—University of Connecticut fruit growers' day, Storrs.

Aug. 27—Four-state joint summer meeting (Md., Pa., W. Va., Va.), in Timberville section of Rockingham County and Mt. Jackson section of Shenandoah County in Virginia. Host: Virginia State Horticultural Society.—John Watson, Sec'y, Va. Soc., Staunton.

Aug. 28-Sept. 1—International Apple Association 60th annual convention, Yakima, Wash.—Norbert Eschmeyer, Sec'y, Public Relations & Promotion, IAA, Washington, D. C.

Oct. 20-22—Florida State Horticultural Society 67th annual meeting, Miami Beach.—Ernest L. Spencer, Sec'y, Bradenton.

Oct. 21-30—National Apple Week (Oct. 30, National Apple Day).—National Apple Week Assn., 1302 18th St., N. W., Washington 6, D. C.

Dec. 1-2—Connecticut Pomological Society annual meeting, Hotel Bond, Hartford.—S. P. Hollister, Sec'y, Storrs.

umes of produce in a particular or given buying area.

MINNESOTA—The unusually mild and open winter has enabled the orchardist to get more pruning done earlier than in any year for a long time. There is some concern among raspberry growers over the lack of moisture and snow cover during the winter.

A large part of the apple crop will be packed in half-bushel cartons. Some interest is also shown in the jumble pack of early apple varieties to eliminate bruising.

The LaCrescent area strawberry growers will use only 12-quart crates, and raspberry growers in this area will use only 12-pint crates.

Leon Gates of Rochester, orchard operator for 30 years, died recently. Mr. Gates had done a great deal of testing of pear varieties and was enthusiastic about possibilities of commercial pear production in this area.—Geo. W. Nelson, Pres., Minn. Fruit Growers Assn.

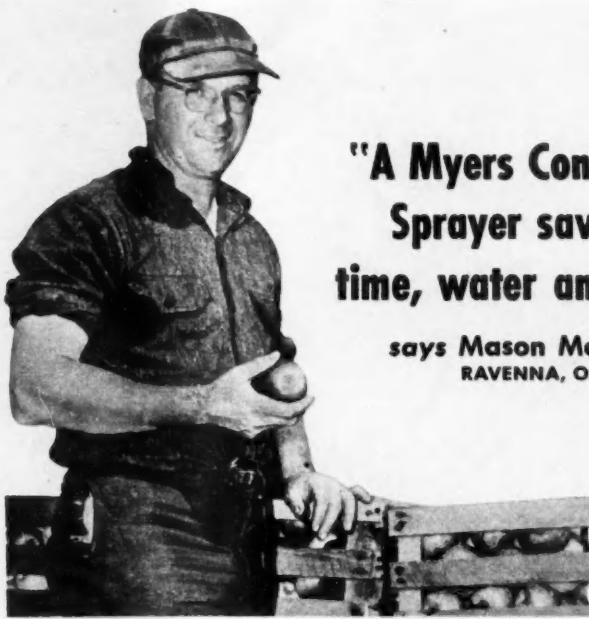
TENNESSEE—Mild February weather brought some peach buds almost to full pink stage but early March reverted to winter status and has set them back. An early bloom is evident, however, extending the period of anxiety.

Good crops last year and the drought, extending into winter months, resulted in a high percentage of weak buds over most of the state. Mortality of subnormal trees—apple and peach—has been quite high. Nevertheless, the trend toward new planting is now clearly evident and quite a few new irrigation outfits are underway.—A. N. Pratt, Sec'y, Nashville.

MARYLAND—Mild weather in February has caused considerable movement in peach buds. The pruning job was entering its last phase in March, and there is considerable evidence of the locust injury and the drought of last summer. Growers are removing as much of the weakened wood as possible and the trees are getting a little extra nitrogen fertilizer to bolster the set and encourage vigor.

It appears that there is a goodly set of fruit buds on the apple varieties that bore moderately or lightly last year. Peach buds are not as heavily set as normally but generally there is prospect of a good crop.—A. F. Vierheller, Sec'y, College Park.

APRIL, 1954



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**says Mason McConnell
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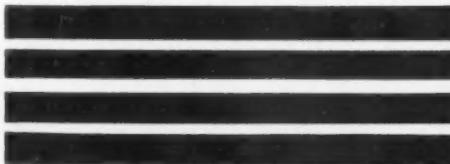
THE QUESTION BOX



A tank mixture of CAPTAN 50-W and MAGNETIC "70" is an effective, economical spray for use in the pre-pink through petal fall period on apples, and in the blossom and early cover sprays on peaches, cherries, and plums. The quick-setting, adhesive action of MAGNETIC "70" teams up with the great, new organic fungicidal properties of CAPTAN to give better early season protection — rain or shine!

Use this winning combination in early sprays, and CAPTAN 50-W alone in cover sprays. This highly recommended spray program has given maximum disease control in higher yields of cleaner, smoother, brighter quality fruit at minimum cost.

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Can I use malathion on McIntosh apple trees early in the season to control rosy and green apple aphids? Will it cause any phosphate injury? —Michigan

Results in Michigan thus far have indicated that malathion can be used on McIntosh apples without apparent injury. Experiments have shown that it will not injure McIntosh trees early in the season when used at the rate of two pounds of 25 per cent wettable malathion.

Who manufactures a straw mulcher for strawberries? —Indiana

Try the Friday Tractor Company located in Hartford, Mich.

What can you tell me about a rumored cross between a pear and an apple called "papple"? —California

A report on the apple-pear hybrid was made by Dr. M. B. Crane of England. The seedlings appear intermediate between the apple and pear in general characters. It is interesting to note that the seedlings have a defective root system and are unable to take up potential nutrients. Thus the young plants die unless budded or grafted onto apple and pear stocks.

Is there a chemical that will destroy Spanish moss? —Louisiana

No, not without destroying the tree, also.

My Starking double-red apples are 15 to 16 years old. Lately, they have started to lose their lovely elongated and five-knobbed shape to take the rounded one of a Jonathan apple. What can this be attributed to? —Nebraska

It is a usually expected pattern as the Starking trees get older for them to lose the more elongated fruit form. This is general not only in the Middle West but also in the Yakima and Wenatchee, Wash., areas. It is easier, however, to hold the desired aristocratic long form on Starking where the trees are regularly irrigated throughout the growing season. One of the key factors seems to be to keep a good water supply through the summer and not allow them to run short on moisture any time during the growing season. In other words, a relatively long shape on Starking can be maintained even on older trees where they are growing on good soil and are maintained in a good state of vigor as a result of ideal soil and moisture conditions throughout the growing season.

It is also true that fruits of the same variety grow flatter in shape in southern latitudes and longer in northern latitudes. Further, fruits that develop from the central blossom cluster are likely to be more blocky and elongate than fruits from lateral flowers which are more roundish-conic. Accordingly, if a frost happens to destroy the central blossoms a crop is likely to be of these less desirable and less typical fruits.

NITROGEN SPRAYS

Nu Green can be used as a spray or soil application

THE development of foliage feeding has been of major significance to the fruit industry. Spray applications of minor elements, used commercially in some areas since the mid 30's, have corrected nutrient deficiencies much more efficiently than soil applications in many instances. More recently the merits of foliar applications of nitrogen have been established.

Research on nitrogen sprays for fruit trees was begun on apples in 1941 at Cornell University. It was found that urea is uniquely suited for leaf feeding because substantial amounts of urea nitrogen can be absorbed and utilized without injury to foliage or fruit.

As a producer of synthetic urea du Pont has made available "Nu Green" fertilizer compound, a specially formulated urea fertilizer, for spray or soil application.

The use of Nu Green applied in sprays has been commercially accepted as a tool in precision nitrogen fertilization of apples. Two to four applications of Nu Green can provide the extra nitrogen needed early in the season for optimum tree growth and fruit set and yet allow the normal drop in leaf nitrogen later in the season for maximum fruit quality development. To obtain greatest response from Nu Green, spray schedules have been worked out for the major apple producing areas.

While sprays fulfill the high early season needs of apple trees, orchards of moderate to low fertility may require additional fertilizer nitrogen to maintain adequate vigor of soil microflora, cover crop, and overall tree growth. For this purpose soil applications of Nu Green or mixed fertilizers may be made in the fall.

Peach Response to Sprays

During the past several seasons research has been expanded to include deciduous fruits other than apples. Peaches respond significantly to spray applications of Nu Green, although to a lesser degree than apples.

Greatest effect on leaf nitrogen and tree growth has been obtained using concentrations of 10 to 15 pounds in 100 gallons, although slight injury has occasionally occurred at the higher level. It is suggested that growers try sprays experimentally before going to full-scale applications. Several users have reported beneficial response.

No definite advantages have so far been shown for sprays over soil applications for cherries.—*Jonas Howard*

APRIL, 1954

Count These Advantages

IN ORCHARD AND GROVE CULTIVATION



FORD TRACTOR and DEARBORN FIELD CULTIVATOR

1 SAVES TIME—Dearborn Field Cultivator hitches quickly to Ford's 3-point linkage. It works fast—cultivates up to 15 or 20 acres a day. And this team can travel miles down the road . . . be tending another grove in a few minutes.

2 SAVES MOISTURE—Prepares soil for greater moisture absorption; reduces evaporation by breaking crust and keeping surface soil loose.

3 SAVES WORK—Dearborn Field Cultivator is close coupled for easy handling and close work. Working depth adjusts hydraulically from tractor seat. And the Ford Tractor gives you extra power for tough conditions.

4 SAVES MONEY—Priced low to start with, the Ford Tractor is a miser with fuel, oil and upkeep. Dearborn Equipment costs less, too.

Find out how the multi-purpose Dearborn Field Cultivator and low cost Ford Tractor power fit your orchard, grove or vineyard. See your nearby Ford Tractor Dealer soon!



TRACTOR AND IMPLEMENT DIVISION
FORD MOTOR COMPANY
Birmingham, Michigan



Ford Farming MEANS BETTER WORK...
MORE INCOME PER ACRE

Your most
efficient source of
supplemental nitrogen . . .

Du Pont
NU GREEN®
Fertilizer Compound

45% urea nitrogen in
free-flowing shot form

Whenever your crops need supplemental nitrogen, "NuGreen" can supply it quickly, without waste, with less work. For greater yields of fruits, vegetables and certain field crops, too . . . use "NuGreen."

IN FOLIAGE SPRAYS. "NuGreen" sprays go to work immediately. The leaves absorb it quickly with no waste, no excess feeding either. Crops get the nitrogen they need even when roots are too dry, cold or wet to get nitrogen from the soil. Use it alone or in regular pest-control sprays.



IN IRRIGATION WATER. Water carries "NuGreen" to all the roots the water reaches, for prompt, even feeding. Penetrates to all the roots, isn't fixed in the first few inches of soil, yet doesn't leach out of reach. Adapted to all types of irrigation equipment.



IN SOIL APPLICATIONS. Concentrated "NuGreen" saves most of the hauling and handling in ground or air application. Ideal for quick, efficient air application that fits needs of crop when wet soil, heavy crop growth or large acreage makes other methods impractical. Won't corrode equipment, either.



E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Wilmington, Delaware



NUGREEN®

is a concentrated free-flowing shot form of urea nitrogen. It dissolves readily in water, comes in 80-lb. bags, and is available from distributors in all major agricultural areas.



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... through Chemistry

"NuGreen" is your best buy in supplemental nitrogen—see your nearest distributor

The Yakima County HORTICULTURAL UNION

Strong co-operatives have been the cornerstone on which a strong western fruit industry was developed. Here is the story of one of the oldest Northwest co-ops

By WILLIAM H. WRIGHT

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The Yakima County Horticultural Union serves a membership of 300 growers in the productive Yakima Valley.

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In its first year of existence the co-op shipped 50 cars of apples. George Rauscher, present sales manager, estimated that the 1953-54 movement in a below-normal year will be more than 1,100 cars, and if pears, peaches, cherries, apricots, and prunes were added to total fresh shipments, they would exceed 1,500 cars.

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The co-op opened its first cold storage plant in 1916 with a capacity of 20,000 boxes. Today, the six YCHU warehouses have cold storage space for two million boxes. Assets, after depreciation, are now more than \$3,550,000.

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NEW BERRIES WIN ACCLAIM

Strawberries developed in California are nationally recognized

THE American Pomological Society at their recent meeting in Indianapolis, Ind., awarded the Wilder silver medal to plant scientists at the Davis campus of the University of California for the development of new varieties of strawberries.

"To the California Agricultural Experiment Station," reads the accompanying citation, "through whose leadership and scientific skill varieties of strawberries have been produced which are the basis for a significant strawberry industry in California."

The medal is in the keeping of the University of California's department of pomology, whose staff members conduct experiment station research on the problems of the California fruit industry.

"Credit for the notable recognition embodied in the Wilder medal," says Warren P. Tufts, chairman of the department of pomology, "belongs to other departments of the University Experiment Station as well as to our own. The development of new varieties of strawberries, which in a few years came to account for a 25-million-dollar industry, began with the researches of the department of plant pathology and involved many men throughout the years."

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The Lassen, one of several other successful varieties also developed at the station, is of particular importance to southern California growers.—Jack Reid.

BLACK END OF PEARS

A COMMON cause of pear breakdown in storage or transit is black end. Black end results from a combination of dry summers and Japanese Sand pear rootstock widely used in establishing orchards as late as the 1920s, states Professor Henry Hartman, head of the Oregon State College department of horticulture. Although it is regarded as a moisture problem, irrigation has not proved effective in eliminating the disorder. Fertilizers, pruning, and sprays to reduce moisture loss through leaves have also failed. Orchards budded on French rootstock, however, are usually quite free of black end, according to Professor Hartman.

**American
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NEWS AND VIEWS

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Great Demand for Baggers

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Grape Growers vs 2, 4-D

Grape growers are at odds with farmers in two states over the use of 2,4-D. In Washington, grape growers want 2,4-D barred from further use in the state whereas wheat growers defend 2,4-D and say that without it they cannot control weeds. In California hazardous areas were established by the State Department of Agriculture to protect commercial vineyards, cotton, and other susceptible crops from damage from drifting spray. Now Sacramento County rice growers want to change the boundaries of the hazardous area near Lodi. Lodi grape growers are against the change and say they cannot take any chances from drifting 2,4-D spray.

Irving J. Woodin, general manager of the California Fruit Exchange, summarized the outstanding points of the 1953 season as follows: Plums averaged \$1.40 lower at auction than 1952; Bartlett pears 87 cents higher; Thompson seedless grapes 72 cents higher. He said that the 1953 Emperor grape season may well be one of the poorest in many years and characterized the '53 California peach deal as disappointing.

Market Change

A change in marketing procedures that affect the fruit grower was recently reported by Stanley Dwinnell of Dwinnell Bros. Orchards, Oroville, Wash. He has noted a trend in the produce industry where service wholesalers are buying for blocks of retail stores which have joined together as "voluntary chains." The significance of this, according to Dwinnell, is that there are fewer buyers for fruit and that the service wholesalers buying in large lots are capable of forcing down the price.

An improved sorting and sizing table may be made available to growers through research sponsored by the USDA. W. H. Elliott, head of the facilities and equipment section, said that the new sorting table should be ready for general commercial use by apple growers next season. The table is now undergoing tests at an apple packing house in Yakima.

Superconcentrated

Superconcentrated apple juice pleased consumers better than regular bottled juice in a recent test by the USDA. Volunteer tasters in two New York department stores preferred the superconcentrate product above the bottled juice by three to two. The concentrated juice product is called full-flavor superconcentrate because it has all the delicate aroma of the starting juice and is diluted with six parts of cold water. Conventional frozen juice concentrates are diluted with three parts of water.

Milton Early Italian is the name of a new prune expected to fill the need of growers who want a virus-free and winter hardy early prune. The fruit ripens 10 to 14 days earlier than other Italians. The variety was tested in the Milton-Freewater area and Willamette Valley.

There is considerable new information about nematodes and their effect on fruit trees. A recent investigation in California showed that two closely related fungus plants are capable of capturing, killing, and devouring certain nematodes, among them the citrus nematode. One fungus plant, called the "fisherman," ensnares in nets, formed among its fungus threads, unwary nematodes. The other, called the "hangman," forms loops from its fungus threads into which nematodes inadvertently enter. The loops are tightened and the nematodes held while fine threads of the fungus penetrate the bodies of the nematodes, extending and enlarging as they advance, finally killing and devouring the worms. Investigation of cultural practices favoring the rapid development of fungus plants is being made.

Frost Protection

For latest information on frost protection, write Robert Rock, extension specialist, University of California, Berkeley, for the bulletin, Facts You Should Know About the Cost of Citrus Frost Protection. He compares cash operating cost, total operating cost, and estimated installation cost for four frost control systems including: 1) Lazy Flame, using 50 24-inch Lazy Flame heaters per acre; 2) return stack, using 50 University return stack heaters per acre; 3) wind and Lazy Flame, using one wind machine designed to protect 10 acres plus 15 24-inch Lazy Flame heaters per acre; and 4) wind and return stack, using one wind machine for 10 acres plus 15 University return stack heaters per acre.

Whether or not to run sheep in the orchard comes in for an interesting discussion in the last issue of the *Northwest Nut Bowl*, published by the Northwest Nut Growers of Portland, Ore. Alex Cruickshank of McMinnville and Allen Ward, formerly with the Ward Farms near Dundee, Ore., list the pros and cons. Although an unirrigated cover crop takes away valuable moisture from the trees, the extra income from the sheep is always welcome, they say.

Getting QUALITY Western Fruit to Market

Polyethylene for pears and cartons for apples are among topics discussed at loss prevention short course

CONSUMER demand for "pre-cooked, convenient food items" will force the Northwest fruit, vegetable, and berry industries to process in one form or another more of their goods in the future, a Hood River, Ore., marketing expert told the Northwest Perishable Loss Prevention short course recently held at Portland, Ore.

The annual short course to promote better handling of Northwest fresh fruits and vegetables is sponsored jointly by Oregon State College, State College of Washington, the University of Idaho, and the American Railway Development Association. Professor Henry J. Hartman, head of the Oregon State College of Agriculture department of horticulture, was general chairman of the short course.

Nicholas Trebin, manager of sales and market development for the Hood River Apple Growers Association, said the trend to canned and frozen fruits and vegetables challenges fresh shippers and small processors of the

area to maintain high quality to meet competition of strongly advertised "convenient" food items.

Wholesale grocers are "looking behind the package" for advertising support to move merchandise, choosing brand names over private labels, the speaker said. Since smaller operators are not able to match advertising dollars, they must support their product either with better quality or lower price, Trebin stated.

Independent grocers, through organization and pressure on their wholesalers to meet the competition of chain stores, are also demanding support in merchandising food.

Pears Must Be Ripe

Northwest pears must be ripe and ready to eat at eastern retail markets if they are to compete successfully with other fruits, including the wide selection of frozen fruits, according to W. T. Pentzer, who heads the division of handling, transportation, and

storage in the USDA marketing service, Washington, D. C. Eye appeal of yellow ripened pears also increases sales, he added.

Polyethylene film liners for pear boxes add one to two months' storage life for Bartlett, Bosc, Comice, and Anjou pears at 31° F., according to Mr. Pentzer. He said this gives some of the benefits of gas storage without the cost of a gas-tight storage room.

If used extensively, the new packing method using polyethylene bags could put the squeeze on the Bosc variety of pear which has had a place between the Bartlett and the Anjou, stated E. R. Pooley, Hood River, Ore., manager of American National Foods, Inc.

Anjous for the winter market can now be carried into April and May and test packages have been kept as late as August, Pooley stated, bringing a heavy cutback in production of the Winter Nelis, formerly considered the late market pear. Winter Nelis production, chiefly in California and Yakima, has shrunk from a high of 600,000 bushels annually to 100,000.

During the past season 195,000 boxes of Anjous and 57,000 boxes of Bartletts were packed in the polyethylene bags which fit inside the standard commercial pear box. A vacuum machine draws air from the bag which is then sealed.

Cartons for Apples

Fiberboard boxes for apples can save approximately \$80 a carload for the packer compared with standard wooden boxes and keep the fruit in better condition under usual handling conditions, according to Earl Carlsen, director of Fruit Industries Research Foundation, Yakima.

Major cost savings in carton packing included original cost of the container, 30 cents for the carton compared with 50 cents for wooden boxes complete with corrugated liner and lids.

Carlsen said research by the Washington State Apple Commission has demonstrated that as many as five sizes of apples can be grouped in one standard box with no increase in bruise damage when they are properly packed.

He said grouping sizes in the standard pack would result in elimination of at least every other size range. The system, he added, would simplify storage and packing plant problems of segregating fruit when only one size is packed in a box. It would also ease selling problems and reduce costs of handling at auctions and in distributors' warehouses; but the big savings, he said, would result from use of speedier and less costly sizing equipment.—Robert Birdsall, OSC Ext. Serv.

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Grape Growers vs 2, 4-D

Grape growers are at odds with farmers in two states over the use of 2,4-D. In Washington, grape growers want 2,4-D barred from further use in the state whereas wheat growers defend 2,4-D and say that without it they cannot control weeds. In California hazardous areas were established by the State Department of Agriculture to protect commercial vineyards, cotton, and other susceptible crops from damage from drifting spray. Now Sacramento County rice growers want to change the boundaries of the hazardous area near Lodi. Lodi grape growers are against the change and say they cannot take any chances from drifting 2,4-D spray.

Irving J. Woodin, general manager of the California Fruit Exchange, summarized the outstanding points of the 1953 season as follows: Plums averaged \$1.40 lower at auction than 1952; Bartlett pears 87 cents higher; Thompson seedless grapes 72 cents higher. He said that the 1953 Emperor grape season may well be one of the poorest in many years and characterized the '53 California peach deal as disappointing.

Market Change

A change in marketing procedures that affect the fruit grower was recently reported by Stanley Dwinnell of Dwinnell Bros. Orchards, Oroville, Wash. He has noted a trend in the produce industry where service wholesalers are buying for blocks of retail stores which have joined together as "voluntary chains." The significance of this, according to Dwinnell, is that there are fewer buyers for fruit and that the service wholesalers buying in large lots are capable of forcing down the price.

An improved sorting and sizing table may be made available to growers through research sponsored by the USDA. W. H. Elliott, head of the facilities and equipment section, said that the new sorting table should be ready for general commercial use by apple growers next season. The table is now undergoing tests at an apple packing house in Yakima.

Superconcentrated

Superconcentrated apple juice pleased consumers better than regular bottled juice in a recent test by the USDA. Volunteer tasters in two New York department stores preferred the superconcentrate product above the bottled juice by three to two. The concentrated juice product is called full-flavor superconcentrate because it has all the delicate aroma of the starting juice and is diluted with six parts of cold water. Conventional frozen juice concentrates are diluted with three parts of water.

Milton Early Italian is the name of a new prune expected to fill the need of growers who want a virus-free and winter hardy early prune. The fruit ripens 10 to 14 days earlier than other Italians. The variety was tested in the Milton-Freewater area and Willamette Valley.

There is considerable new information about nematodes and their effect on fruit trees. A recent investigation in California showed that two closely related fungus plants are capable of capturing, killing, and devouring certain nematodes, among them the citrus nematode. One fungus plant, called the "fisherman," ensnares in nets, formed among its fungus threads, unwary nematodes. The other, called the "hangman," forms loops from its fungus threads into which nematodes inadvertently enter. The loops are tightened and the nematodes held while fine threads of the fungus penetrate the bodies of the nematodes, extending and enlarging as they advance, finally killing and devouring the worms. Investigation of cultural practices favoring the rapid development of fungus plants is being made.

Frost Protection

For latest information on frost protection, write Robert Rock, extension specialist, University of California, Berkeley, for the bulletin, Facts You Should Know About the Cost of Citrus Frost Protection. He compares cash operating cost, total operating cost, and estimated installation cost for four frost control systems including: 1) Lazy Flame, using 50 24-inch Lazy Flame heaters per acre; 2) return stack, using 50 University return stack heaters per acre; 3) wind and Lazy Flame, using one wind machine designed to protect 10 acres plus 15 24-inch Lazy Flame heaters per acre; and 4) wind and return stack, using one wind machine for 10 acres plus 15 University return stack heaters per acre.

Whether or not to run sheep in the orchard comes in for an interesting discussion in the last issue of the *Northwest Nut Bowl*, published by the Northwest Nut Growers of Portland, Ore. Alex Cruickshank of McMinnville and Allen Ward, formerly with the Ward Farms near Dundee, Ore., list the pros and cons. Although an unirrigated cover crop takes away valuable moisture from the trees, the extra income from the sheep is always welcome, they say.

Getting QUALITY Western Fruit to Market

Polyethylene for pears and cartons for apples are among topics discussed at loss prevention short course

CONSUMER demand for "pre-cooked, convenient food items" will force the Northwest fruit, vegetable, and berry industries to process in one form or another more of their goods in the future, a Hood River, Ore., marketing expert told the Northwest Perishable Loss Prevention short course recently held at Portland, Ore.

The annual short course to promote better handling of Northwest fresh fruits and vegetables is sponsored jointly by Oregon State College, State College of Washington, the University of Idaho, and the American Railway Development Association. Professor Henry J. Hartman, head of the Oregon State College of Agriculture department of horticulture, was general chairman of the short course.

Nicholas Trebin, manager of sales and market development for the Hood River Apple Growers Association, said the trend to canned and frozen fruits and vegetables challenges fresh shippers and small processors of the

area to maintain high quality to meet competition of strongly advertised "convenient" food items.

Wholesale grocers are "looking behind the package" for advertising support to move merchandise, choosing brand names over private labels, the speaker said. Since smaller operators are not able to match advertising dollars, they must support their product either with better quality or lower price, Trebin stated.

Independent grocers, through organization and pressure on their wholesalers to meet the competition of chain stores, are also demanding support in merchandising food.

Pears Must Be Ripe

Northwest pears must be ripe and ready to eat at eastern retail markets if they are to compete successfully with other fruits, including the wide selection of frozen fruits, according to W. T. Pentzer, who heads the division of handling, transportation, and

storage in the USDA marketing service, Washington, D. C. Eye appeal of yellow ripened pears also increases sales, he added.

Polyethylene film liners for pear boxes add one to two months' storage life for Bartlett, Bosc, Comice, and Anjou pears at 31° F., according to Mr. Pentzer. He said this gives some of the benefits of gas storage without the cost of a gas-tight storage room.

If used extensively, the new packing method using polyethylene bags could put the squeeze on the Bosc variety of pear which has had a place between the Bartlett and the Anjou, stated E. R. Pooley, Hood River, Ore., manager of American National Foods, Inc.

Anjous for the winter market can now be carried into April and May and test packages have been kept as late as August, Pooley stated, bringing a heavy cutback in production of the Winter Nelis, formerly considered the late market pear. Winter Nelis production, chiefly in California and Yakima, has shrunk from a high of 600,000 bushels annually to 100,000.

During the past season 195,000 boxes of Anjous and 57,000 boxes of Bartletts were packed in the polyethylene bags which fit inside the standard commercial pear box. A vacuum machine draws air from the bag which is then sealed.

Cartons for Apples

Fiberboard boxes for apples can save approximately \$80 a carload for the packer compared with standard wooden boxes and keep the fruit in better condition under usual handling conditions, according to Earl Carlsen, director of Fruit Industries Research Foundation, Yakima.

Major cost savings in carton packing included original cost of the container, 30 cents for the carton compared with 50 cents for wooden boxes complete with corrugated liner and lids.

Carlsen said research by the Washington State Apple Commission has demonstrated that as many as five sizes of apples can be grouped in one standard box with no increase in bruise damage when they are properly packed.

He said grouping sizes in the standard pack would result in elimination of at least every other size range. The system, he added, would simplify storage and packing plant problems of segregating fruit when only one size is packed in a box. It would also ease selling problems and reduce costs of handling at auctions and in distributors' warehouses; but the big savings, he said, would result from use of speedier and less costly sizing equipment.—Robert Birdsall, OSC Ext. Serv.

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IT PAYS TO FERTILIZE

KEY MEN MEET IN ANNUAL PEACH CONVENTION

Growers are given cold facts on how to increase retail demand

By M. J. DORSEY

Secretary, National Peach Council

THE National Peach Council held its 13th annual meeting at Fresno, Calif., February 13-17. The first two days were spent in studying the cultural methods of the various fruits, particularly the peach, in the great Fresno horticultural area. The local group, headed by NPC president Charles Pruess, did an excellent job in making the local arrangements.

One nice note in the welcoming program was the presentation of a gavel made of peach wood to the council by the Horticultural Club of Fresno State College.

Eastern members were interested to learn from the crop "guesstimate" that peach production in the West is on the up-grade. The review of crop prospects for 1954 showed that there had been very little injury to fruit buds thus far except in the state of Washington where a late freeze caused considerable damage.

With nearly all states showing full crop prospects on February 15 it seemed that the total yield, including 21 million bushels of canning clingings from California, was in the neighborhood of 60 million bushels. Ontario reported 2,200,000 bushels as a fair estimate of their crop.

Much emphasis was placed on research as a basic aid to quality production. In view of the fact that production of canning clingings is so extensive and quality control measures are so rigid,

the eastern group was keenly interested in the methods of the California Canning Peach Association to control both the quantity and the quality of the crop.

Cooling methods and packages were reviewed and key men in the retail trade told the growers what they can do to step up the tempo of peach sales in retail outlets. It will be necessary for all sections of the trade to take part in a program designed to harvest peaches at the right maturity, reduce injuries, obtain better temperature control, and improve handling methods in retail outlets.

A review of the season's experience with hydro-cooling and other methods of quick cooling indicated that advantage should be taken of such methods.

Panel discussion on techniques for promoting freestone peaches pointed out that many things can be done in retail outlets to increase consumer interest in peaches. Eye appeal greatly influences consumer purchases.

The old question of varieties came up for review. Those present reported on the trends in new plantings and the promise of new varieties. The main objective of peach breeders is to increase carrying capacity and quality for special uses, and to "spread the season."

The review of commodity problems at the national level in annual meetings of the council is equally valuable to all regions. A result of meetings of this kind is the importance of the wide personal acquaintance which develops between the key men in the industry. THE END



J. B. Kauffman, York, Pa. (center, seated), was elected president of National Peach Council at the 1954 meeting held in Fresno, Calif. Other peachmen shown include, seated, from left: Curt Eckert, Belleville, Ill., first vice-president; Charles Pruess, Clovis, Calif., retiring president; Mr. Kauffman; A. G. Smith, Lexington, S. C., past president; Paul Black, Spartanburg, S. C., chairman, executive com-

mittee. Standing, from left: Directors A. J. Farley, New Brunswick, N. J.; Mark Boatright, Johnston, S. C.; Carl Hoisington, Palisade, Colo.; H. W. Van Gelder, Fresno, Calif.; Harry Nye, St. Joseph, Mich.; and secretary-treasurer M. J. Dorsey, Urbana, Ill. Directors D. B. Yarbrough, Nashville, Ark.; Lionel Newcomer, Fleetwood, Pa.; and Ray Kluckie, Lafeyette, Ind., are not shown.

APRIL, 1954

Types of WOOD CHIPS you can get with a FITCHBURG CHIPPER



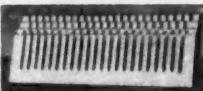
KEY

- | | | | |
|---|-----------------------------------------------------------------------|---|----------------------------------------------------------------|
| 1 | Maple Brush, Straight Blades, set 1/8" | 3 | Pine Board Butts, Serrated Blades, set 1/16" (Stable Bedding) |
| 2 | Green and Dry Pine Slabs, Serrated Blades, set 3/32" (Poultry Litter) | 4 | Dry Oak Pole Wood, Serrated Blades, set 1/16" (Stable Bedding) |
| 5 | Green Pole Wood, Serrated Blades, set 1/16" (Stable Bedding) | | |

When you own a Fitchburg Chipper, you benefit three ways. First, you can convert woodland thinnings into valuable wood chips for low-cost mulch, poultry litter and stable bedding. Second, at the same time you give new life to young trees—eliminate the fire hazard of dead brush, undergrowth and fallen limbs. Third, manured wood chips provide an excellent soil amendment, and handle well with a spreader.



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Contains money-saving suggestions and details for using wood chips as mulch, poultry litter, stable bedding. Outlines ways to make extra money with a Fitchburg Chipper, gives technical data, diagrams, specifications, etc.



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"Fermate" is the mild, protective fungicide that lets trees grow almost disease-free, without shocking them into biennial bearing habits or loss of vigor.

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"Fermate" controls more diseases than any other fungicide on apples. It controls apple scab, cedar rusts, bitter rot, apple blotch, blossom-end rots, sooty blotch, Brooks spot and flyspeck. It works equally well against the major diseases of pears, stone fruits, grapes and berries, too.

"Fermate" produces higher yields . . . as much as 60 boxes per acre more good fruit than any other fungicide and a 5-year test averaged 210 boxes per acre more than sulfur.

"Fermate" gives better fruit quality—doesn't burn or scald trees preventing blemishes—keeps apples firm with good storing qualities.

"Fermate" builds up orchard productivity. Here's the most important benefit of all . . . year by year "Fermate"-sprayed trees increase in yield and vigor, foliage color and fruit set. This means a cumulative benefit from using "Fermate" added to the specific advantages listed above.

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WHAT ANF MEANS TO GROWERS

Sale of American Fruit Growers and its famous Blue Goose brand to a co-operative group marks a significant step forward in fruit and vegetable marketing

By JAMES H. WEST

WHAT can very well develop into the most outstanding contribution to the solution of the "farm problem" was put into effect at the close of 1953. This was the acquisition of ownership of American Fruit Growers, Inc., and with it the well-known brand name, Blue Goose, by the American National Foods, Inc., a co-operative organized in 1937 under the name of American National Co-operative Exchange, Inc.

American Fruit Growers, Inc., established in 1919, was a national production, packing, and marketing organization with offices in most of the major terminal food markets of the country. American National Foods was formed by a number of the leading co-operative commodity sales associations around the country. Among these are Maine Potato Growers, Eatmor Cranberries, Idaho Potatoes, Skookum Apples, and Colorado Peach Growers.

This is a picture of farm people working together to solve their own problems without going to government. If the money we get as farmers is to mean anything it must come from our own efforts and not from tax dollars. In fact, the latter is a very dangerous substitute. What is given by government in any form can be taken away just as readily.

Bargaining Power

Agriculture is the only segment of our economy which does not set the price for the articles it produces. Heretofore we shipped, transported, or carried our fruits and vegetables to market and asked humbly, with hat in hand, what will you give me? Or were told we will give you so much.

As individual producers this is all we can do. But, when thousands of producers band together and agree to sell their products co-operatively the bargaining power of the individual is multiplied just that many times.

Here's the catch—you must be big enough to affect the market. Small, local co-operative sales organizations cannot do it alone in any commodity. American National Foods can develop

The author, JAMES H. WEST, prominent Ohio nurseryman, is a director of American National Foods.

AMERICAN FRUIT GROWER

into a pattern for other commodity groups to follow.

There are problems, many of them. Such an endeavor calls for the whole-hearted willingness on the part of member associations to sacrifice their individual identity to a certain degree. There must be a consecrated desire on the part of American National Foods to cast its lot with other groups for the betterment of the total group. These are human problems and can always be resolved when a sincere desire exists to do so.

Managed by Businessmen

The operating heads of the member associations which make up American National Foods are hard-headed businessmen who have been doing an excellent job in their respective fields. In American National Foods they see the possibilities of much greater advantage to their members through a nationwide sales organization. They would not have gone into it if they had not.

The ramifications which this group can properly engage in are almost limitless—perhaps limited only by the imagination of its board of directors and management.

THE END

PREVENTING EXCESS FOAMING

VERY efficient wetting agents are being employed by spray manufacturers in all spray materials which need wetting agents to bring the materials into suspension. Since these wetting agents are so efficient in producing bubbles in water solution, even with slight agitation, foaming becomes excessive when concentrated spray mixtures are used. It is necessary, in many cases, to prevent this excess foaming in order that the spray tank may be filled properly.

The materials best suited as anti-foaming agents are the insoluble alcohols. One of the best insoluble alcohols is octyl alcohol (2-ethyl hexanol). Another insoluble alcohol which has proved quite effective as a foamicide is diisobutyl carbinol.

These alcohols should be used at the rate of one to three ounces for each 100 gallons of spray. The exact amount will depend upon the concentration of the spray material being applied and the amount of agitation in the spray tank.

—R. H. Hurt, Piedmont Fruit Research Laboratory, Charlottesville, Va.

Insoluble alcohols may be obtained from Carbide and Carbon Chemicals Company, 15 E. 41st St., New York 17, N.Y., and E.I. du Pont de Nemours & Company, Inc., Wilmington 98, Del.

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Dependable "Marlate" gives consistently high kill of curculio. It prevents egg-laying scars and feeding punctures—gives protection early and late in the season. When you use "Marlate" for curculio, you get top control of codling moth, too.

Gives fine-fruit finish

"Marlate" contributes to fine-fruit finish. When used in combination with "Fermate" or other organic fungicides, russetting and other chemical injury are no problem.

Minimum residue hazards

In late sprays for apple maggot, "Marlate" provides protection close to harvest, yet presents no problem to the persons who eat the fruit. This characteristic of "Marlate" is also a great advantage for insect control on vegetables and forage crops.

For cherry fruit fly . . . there's nothing better than "Marlate." From egg-hatching time till close to cherry harvest, "Marlate" gives excellent kill with no injury or effect on vegetative growth.

See your supplier now for "Marlate" 50% technical insecticide. It will pay you well to use "Marlate" this season.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.



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Successful fruit growers know from experience that Niagara dusts and sprays, used in a planned, all-season program of insect and disease control are responsible for maximum tree production of finer finished fruit.

It's the superior quality of Niagara materials that enables you to get a full measure of protection from a well-managed schedule. Whatever the problem, there's a better Niagara formulation, skillfully compounded for the most effective control, and proved by extensive laboratory and field testing.

Your friendly Niagara man has the experience and ability to help you set up a complete program that will result in many extra bushels of finer finished fruit at harvest time. Call him in today.

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Keep Up-to-Date on STRAWBERRY VIRUS

Future of berry growing looks bright with virus-free stock

PROGRESS in developing stocks of strawberry varieties free from virus diseases is moving along. In the March, 1950, and the April, 1953, issues of AMERICAN FRUIT GROWER you were told of the research work being conducted by the USDA to obtain varieties of strawberries free from viruses.

Last season the New York Agricultural Experiment Station compared virus-free strawberry stock with regular stock as to survival ability of the plants. Varieties included Catskill, Premier, and Sparkle. The virus-free stock stood well above regular stock in percentage of plants living at the end of the season. The virus-free stock also made many more runner plants.

Most of the yields from test plantings of virus-free stock have ranged between 400 and 500 crates per acre. This is well above the yields of 250 to 300 crates per acre from commercial plantings of regular stock. The berries from virus-free plants may also be larger than those from regular plants.

Care of Virus-Free Planting

Last summer I asked Albert and W. Lee Allen of the W. F. Allen Company, Salisbury, Md., how best to take care of a virus-free planting.

They suggested that anyone planting virus-free plants should follow the same dusting program that they are required to follow in raising plants. This means dusting once every 10 to 14 days with a one per cent parathion dust, using from 25 to 35 pounds per acre. This keeps out the aphids which spread the virus.

Plant propagators are required to set virus-free stock at least 2,000 feet from other plants. This may or may not be necessary for a commercial berry grower to do. It may be more convenient for him to dust all his berries, even wild ones nearby.

Berry plant growers co-operating with the USDA in producing virus-free plants must also fumigate their soils to rid them of plant parasitic nematodes. Materials used for this are chlordane and aldrin. Plans of the USDA and co-operating nurserymen are to produce stock which is free from both virus and nematodes. —Eldon S. Banta.

Sources of virus-free strawberry plants for eastern U.S.: W. F. Allen Company, Salisbury, Md.; Rayner Brothers, Salisbury, Md.; Bunting's Nurseries, Selbyville, Del.; Sinclair Nurseries, Dayton, Tenn. Sources of virus-free Marshall plants for western states: Tulava Nursery, Tulelake, Calif.; Tidewater Farms, Tidewater, Ore.; E.L. Ticknor, Centralia, Wash.

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FARM NO. 1

ORCHARD FARM 919 ACRES

Approximately 8,770 Mature Trees

1,200 5-10 year old trees

1,000 1-5 year old trees

Principally Rome Beauty, Willow-Twig, Red Delicious, Cortland and other varieties.

Bushels Sold	1951 Crop	82,803 Bushel	Sale Price	\$148,500.00
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In addition to Orchard approximately 500 acres for general farming purposes.

Refrigerated storage for 70,000 crates of apples. Complete grading facilities and Public Sales Room.

Complete for continued operation of Orchard and Farm including, Tractors, Trucks, spray equipment and all other facilities including 13 houses.

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MAIN CATTLE FARMS 729.1 ACRES

With all barns, sheds, silos and other equipment for operation of a large Cattle farm, including five houses. All in excellent grass and pasture, one of the finest grass farms in the country.

Any person interested in establishing a cattle farm of substantial proportions would be justified in inspecting the advantages of this farm as it is impossible to fully describe the value of this property as a cattle operation.

FARMS NOS. 3, 4, 5, and 6

Varying in size from 140 acres to 359 acres, with houses and barns.

ALSO, TWO HOUSES WITH AMPLE YARDS.

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These properties can be operated as a successful business and are only being sold to settle the estate of C. A. Smith, deceased.

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Till without toil! Completely prepare your garden for planting in one operation...then cultivate, weed and mulch. Plenty of power, and what a performer... turns on a dime. Budget priced for you to enjoy better crops and better soil.



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WINDFALLS

It is said that Isaac Newton while sitting under an apple tree was struck on the head by a falling apple. Thus he conceived the great truth of his Law of Gravitation.



A Forum on the Human Side of Orcharding

Led by HENRY BAILEY STEVENS

If this column were called "Drops" I wouldn't like it.

We just have to make the best of the drop. It is a liability, in cultivated orchards likely to be soiled, in sod-mulch punctured. The chances of a bruise are high, and frequently something wrong inside caused the tree to release it: an insect sting, a worm, scab, cork, or some other kind of sickness. We are rightly suspicious of drops. They are moved as quickly as possible: the A's for roadside sale at a lower price; the B's into cider or sauce; the Z's to garbage and pigs.

But windfalls are different. In the literal sense they are perhaps as bad for the grower as any other kind of drop. In fact, when the hurricane 15 years ago knocked off the ripe Macs hereabouts, the morning-after was one of the bluest we have ever known. But in common usage the word has a pleasant sound and has come to mean an unexpected blessing like a legacy that you knew nothing about. Originally it must have been a drop with a halo around it.

Tree-Ripened Beauty

I can remember a solitary sweet apple tree, full of sprouts and difficult to climb, and a boy's joy in the first fruits of the year discovered in the grass. Even now, at the end of the season, when the pickers have finished, what apple can compare with that tree-ripened beauty that had been out of reach and suddenly appears at your feet as you walk down the row? Very likely it was not the wind that dislodged it, but it is an unforeseen delight as your tongue tastes its juice. To children, mice, cattle, and other apple-loving creatures all drops must seem a gift from on high.

The principal object of this column will be to explore the relationship of orcharding to other phases of life than direct financial profit. It may not always be happy; sometimes there are

likely to be heartaches in it. But whenever we can turn a drop into a windfall we promise to do so.

Newton and the Apple

Take Isaac Newton, for instance, whose experience has been celebrated by the artist in our masthead. A timid and diffident child, he grew up fatherless in a lonely farmhouse in a countryside just recovering from civil war. His deep interest in books and mechanical contrivances spoiled him for practical farming; he would peg a sun-dial on the walls and roof of the house instead of tending the sheep. At Cambridge University he meditated long over the new discoveries in astronomy made by Galileo and Kepler; and he was still in his early twenties when his observation of an apple falling from the tree suddenly filled him with the great truth of the law of gravitation that bears his name. He saw the universe as a unit in which every particle exercises the power of attraction for every other particle. This principle explained the motion of the planets.

If we may paraphrase the lines of Pope, who forgot to give the apple any credit:

"Nature and Nature's Laws lay hid
in night;
Newton prayed hard for help to see
the light;
God let the Apple fall!—And all was
bright."

The story that the "windfall" hit him on the head is doubtless an embellishment, but one could say facetiously that it struck his brain and made him see stars.

R.S.V.P.

Newton's illumination is but one of many instances of a congenial living together between man and tree. The practical person who thinks that food is the

only contribution of fruit trees to human society misses a great point. The very word "culture" grew out of our cultivation of the food-bearing plants. There is good reason to believe that it was within the ancient garden that the arts and sciences were first nourished. The dance and chorus around the sacred tree evolved into poetry and drama. The beginnings of organized religion were here. It was out of the blossoming bush that God first spoke to Moses. It was under the fig tree that Buddha found his enlightenment. Jesus passed his novitiate alone among the trees, and in his great crisis sought solace in the Garden.

There has been much talk in our time of Culture—usually by people not associated with horticulture, which might properly be considered a primary requirement. I have long desired to get the ideas of fruit growers on this subject, and this is one reason why I have agreed with the editor of AMERICAN FRUIT GROWER to attempt this column.

Hidden Values?

But discussion is a two-way affair. If this is to be a forum, you must help us pick up the windfalls. Please write us whether the cultivation of the earth in your case has deepened your appreciation of Beauty, Art, Science, and Religion. Does your orchard or garden have meanings to you beyond that of food production? Does a fruit farm have any special value as a training ground for children? (If so, perhaps our schools should take more notice of it.) What poems, songs, or art from this source have moved you and sustained you in time of trouble? (Please send us copies.) This is the period of Easter. Soon it will be blossoms time. Would you be willing to invite the Sunday School to celebrate the occasion and march down the flowering rows singing "Alleluia"? What have you found under the trees of hidden value in building character?

Let us hear from you; and if you think that we are being farfetched in all this, please tell us so frankly. We are concerned with the truth and anxious to share the inner thoughts of fruit-growing families—the matters you discuss among yourselves that you find of deep significance when the day's work is done.

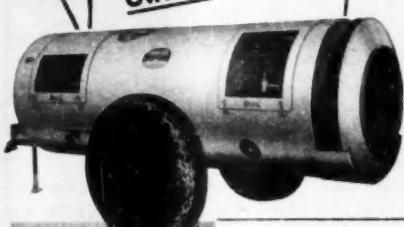
THE END

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Chloro-IPC, the great new herbicide ingredient pioneered by Columbia-Southern for weed control in cotton, is now being studied by many growers for other agricultural crops.

In spinach, for example, grower tests have shown that one application of Chloro-IPC controls most annual grasses and many broad-leaved weeds for periods up to six weeks. While data gathered on the use of Chloro-IPC in spinach is not firmly conclusive, it indicates great promise. Following are the answers to the most frequently asked questions.

WHY?

The use of Chloro-IPC in spinach growing reduces hand weeding costs as much as 90%. In areas tested, the results were a better, cleaner, greener crop.

WHEN?

Chloro-IPC has been applied at planting time at the rate of 1-2 pounds on a fall-planted crop and 2-4 pounds on a spring-planted crop.

HOW?

Mix the required amount of Chloro-IPC in 25-50 gallons of water to make enough spray for one acre. Calibrate your sprayer to suit conditions. Apply to the soil as the crop is planted, or a few days after planting, but in any case before the crop emerges.

For further details on the possible use of Chloro-IPC in your crops, contact your favorite pesticide dealer.



In early summer strawberry frames are covered with rush mats to shorten natural day-length. Photo courtesy Experimental Station, Naaldwijk.

TWO CROP PRODUCTION

(Continued from page 13)

the plants may not have had enough cold to break dormancy.

Subsoil irrigation is used on an increasing scale. Very good results are obtained with drain pipes which are laid in the soil previous to planting. It may be necessary to water the plants in spring. If the surface of the soil is watered, the flowers and the fruits become moist, which promotes Botrytis rot. If the water is supplied through the drains, the soil surface keeps dry.

During the first months of the year the frames are kept closed. During flowering, in April, the frames are thoroughly ventilated. To this end little blocks are put under the lights. Wind and bees are very favorable for pollination. The fruits ripen in May.

The Second Crop in Autumn

The common practice is to clear the crop after the harvest in May, and either the lights are used for another crop or they are used no more than year and piled up. In some cases, however, the plants are kept over to produce a second crop in autumn. Under ordinary culture there may occur some flowering during the late summer and autumn, especially in cool summers, but resulting crops are practically always unsatisfactory. To obtain a reliable crop in autumn it is necessary to induce artificially an early development of the flower buds in summer by shortening the day-length in June and July.

Investigations carried out by Dr. George M. Darrow at Beltsville, Md., have already shown the influence of the day-length on growth and flower formation. Later on similar investigations were undertaken at Wageningen by Dr. E. W. B. van den Muyzenberg; for the variety Deutsch Evern he has devised a method of cultivation by which ripe strawberries can be harvested the year

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round. Dr. v. d. Muyzenberg found that for a crop in September, and consequently flowering in August, the natural day-length (16½ hours) should be reduced to 11 to 12 hours, commencing at the end of May, for four to six weeks. For this purpose the frames are covered with thick matting from 6:00 P.M. till 6:00 to 7:00 A.M.

The first flowers appear about two to two and one-half months after the beginning of the short-day treatment, and the first fruits ripen one month later, in September. The period of harvesting, and consequently the size of the crops, is determined primarily by the uncontrollable factor of weather. A yield of two pounds per light is satisfactory.

Additional Costs

The additional production costs involved in the growing of autumn strawberries are not very high. The rush mats last about five years. The expenditure for hand labor constitutes a large part of the production costs: the mats must be rolled two times a day, for six weeks; the plants must be cleaned after the first crop; and last but not least, spraying against mildew is very essential. The success of an autumn crop largely depends on the health of the plants; tarsonemid mites and mildew may destroy the plants, their flowers, and fruits. Certified plants should be used.

From the foregoing it is clear that the second-crop production of strawberries by means of a short-day treatment is a continuation of the spring culture under glass; it is not carried out as a separate culture, which (although possible in principle) would not pay. Therefore, only very early varieties are fit for this culture; in the Netherlands Deutsch Evern still gives the best results. Later maturing varieties, such as the new Scottish variety Auchincruive Climax, are unsuitable, even though they naturally achieve a strong second flowering and harvest.

THE END

Fruit Production at a Glance

	Average 1942-51	USDA Mar. 1, Est. 1953
Oranges		
Calif., all	46,265	45,530
Navels & Misc.	16,841	16,630
Valencias	29,424	28,900
Florida, all	55,080	72,200
Templas	924*	1,700
Early & Mid-season	29,231	40,600
Valencias	25,110	29,900
Other States	4,665	1,950
Total Early & Midseason	49,746	60,080
Total Valencias	56,264	58,600
Tangerines	4,340	4,900
Grapefruit		
Florida	29,820	32,500
Texas	15,342	400
Other States	6,084	5,400
Lemons	12,722	12,500

*Short-time average.

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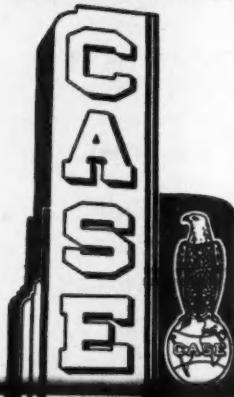
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BREEDING STRAWBERRIES

Emphasis is placed upon developing varieties to meet specific area needs

By JULIAN C. MILLER

Louisiana State University

THE strawberry is the most important small fruit grown in North America. Its popularity can be attributed largely to two important facts: First, its adapt-

ability—it can be grown on most soil types from the tropical areas of the South to as far north as central Alaska. Second, its high dessert and aromatic quality. It was Roger Williams who said, "God could have made, but God never did make, a better berry."

Although the strawberry can be grown over a wide range of territory and on many soil types, the fact remains that most of the commercial varieties are relatively limited in their areas of adaptability. Plant breeders in each major area are breeding varieties to meet the needs of the growers and the industry in their particular areas. A national survey shows that strawberry breeding programs are now being carried on in 36 of the 48 states. Varieties have already been introduced by the USDA, California, Oregon, Minnesota, Wisconsin, New Jersey, New York, Illinois, North Carolina, Tennessee, and Louisiana.

Three Louisiana Varieties

Three varieties which illustrate the importance of breeding for local conditions are the Klonmore, Marion Bell, and Konvoy, introduced by the Louisiana State Agricultural Experiment Station.

Klonmore—Recommended for commercial purposes in south Louisiana only. It is a cross between the Klondike and the Blakemore. It is a high yielder, of excellent table quality, and a good shipper, and it does not have to be sprayed for leaf spot and scorch control. It is an early producer and also bears a late crop, which is desirable for the quick-freeze trade. For best results plants should be set in the field around the first of November. Klonmore does not produce satisfactorily when planted north of Baton Rouge.

Marion Bell—This variety has not been grown extensively as yet. Fruit of the Marion Bell has a brighter gloss than that of the Klonmore or the Konvoy, giving it the appearance of being waxed. The plant is open and its foliage is not so dense as that of the Klonmore. This allows the sun to shine on the fruit and possibly reduces fruit rots. It outyielded the Klonmore significantly five years out of six (1945-1950). The Klonmore outyielded it in 1950. It is resistant to leaf spot and scorch.

Konvoy—Recommended for home gardens in Louisiana. A cross between Klondike and Fairmore. The fruit is bright red and very glossy. It is a heavy fruiter and the foliage grows vigorously, sometimes perhaps furnishing the fruit protection from the cold. The fruit is large, ripens early, but is not so firm as that of the Klonmore. It is an excellent berry for quick freezing. It has outyielded all other Louisiana varieties and has showed up well in test plots in the Carolinas and Florida. It, like Klonmore and Marion Bell, does not require spraying in order to control leaf spot and scorch.

THE END

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for information.

GROW BETTER PLANTS

(Continued from page 15)

Hand hoeing to break the soil crust near the cans will aid in the rooting of runner plants. When it is apparent that the "mother" plants in the cans are no longer needed for propagation they may be removed.

Following such a program produces strawberry plants in the treated soil which should be relatively free of plant parasitic nematodes. The plants should be dug early the following spring and placed in suitable storage if ground is not available for immediate planting. Strawberry growers agree that early planting results in a better plant stand than late planting.

First Generation Plant Production

Plants produced from an MC-2 bed can be expanded in either another MC-2-treated site or an area treated with one of the other available soil fumigants. If a large area is needed for setting out plants the site can be treated with ethylene dibromide² (EDB). This material can be applied in the fall or early spring.

The equipment required for such treatment is a chisel-type applicator as shown in the photograph on page 15. The chisels are spaced 10 inches apart and capable of placing the fumigant six to eight inches in the ground. The suggested rate of W-85 is nine gallons per acre. Better results are often obtained if soil temperatures at time of application are 50° F. or above.

Fall applications of the fumigant are preferred in areas where cool, wet weather prevails in the spring. Application in the fall permits more complete aeration by planting time and may result in better control of certain species of nematodes deep in the soil.

If it is not possible to plant early in the spring it is advisable to dig the plants and place them in storage for later planting. When spring applications of fumigant are made, seven to 10 days should elapse between fumigation and planting. Twenty-four hours before planting the treated area should be well worked to insure proper aeration of the fumigant from the soil.

Good cultural practices, consisting of suitable soil preparation, use of starter solution, and proper fertilizer and irrigation applications, are necessary to obtain good plant stand and growth.

Premier strawberry plants that were grown in the manner described above during the 1952 growing season resulted in almost twice the number of plants produced per acre the following spring in EDB-fumigated land compared to untreated soil. This is shown in the following table where all plants origi-

²Dowfume W-85. One gallon of W-85 contains two thirds of a gallon of ethylene dibromide.

(Continued on next page)

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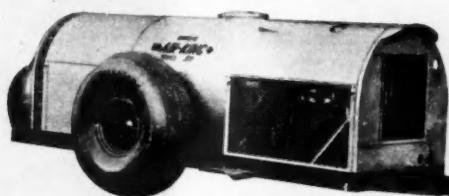
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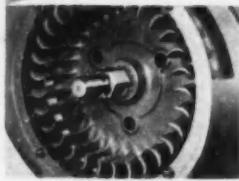
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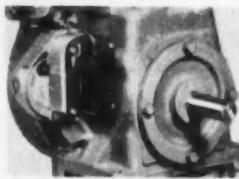
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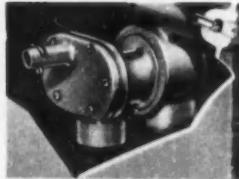
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GROW BETTER PLANTS

(Continued from page 39)

nated in MC-2 treated soil from the "mother" plants in cans.

Treatment	No. of Plants per Acre
Dowfume W-85, 9 gals. per acre...	309,590
Untreated.....	188,410

The planting in the above test received good weed control, was side-dressed with 1,000 pounds of 3-12-12 per acre, and was irrigated when necessary.

Fruit Production

Growing strawberry plants according to the above procedure is of little value unless the field where the plants are to be grown for fruit production is either relatively free of harmful nematodes or is treated to reduce their population. Likewise, there is probably little to be gained by placing strawberry plants from infested soil in clean fields that have been treated for nematodes.

Where it is desired to establish a strawberry planting and it is suspected that nematodes may be present in the soil, it is possible to treat the field with ethylene dibromide as indicated above for large-scale plant production. Large acreages are readily treated with such chisel applicators. The dosage of EDB required varies according to the nematode problem. If only the root-knot nematode is a problem 4.5 gallons of W-85 per acre is sufficient. Control of other types of nematodes may require up to nine gallons of W-85 per acre.

The following table shows the response as indicated by increased runner plant production of commercially available Blakemore strawberry plants when planted in portions of the field receiving an overall treatment of nine gallons of W-85 per acre in the spring of 1952.

Treatment	Number of Runner Plants per Acre
Dowfume W-85, 9 gals. per acre...	162,680
Untreated.....	65,570

Examination of this soil prior to planting revealed the presence of a moderate infestation of the root lesion nematode.

Although strawberry plants have demonstrated considerable tolerance to EDB it is suggested that for spring applications an interval of at least seven days be allowed between treatment and planting. This is the minimum period and is satisfactory on light, sandy soils when the soil temperature is above 50° F. A longer interval may be required on heavier soils of higher moisture content. Where early planting in the spring is desired fall applications may be necessary to eliminate the waiting period between treating and planting.

Soil fumigation for strawberry growers is a new practice and should be undertaken on a limited scale. Soil fumigants may all be safely handled if manufacturers' directions are carefully followed.

THE END

Garden Tractors perform varied jobs



Popular garden tractor job is weeding as is being done here by Simplicity, Springfield, Ohio.



Rotary tiller of Roto-Hoe, Newbury, Ohio, is versatile tool for preparing soil and cultivating.



Variation on garden tractor idea is the portable Scythe manufactured by Hoffco, Richmond, Ind.



For heavier jobs 4-wheel garden tractors are recommended such as Eshelman, Baltimore 2, Md.



The rotary cutter is useful for tall weeds as well as lawns. Made by Gravely, Dunbar, W. Va.

APRIL, 1954

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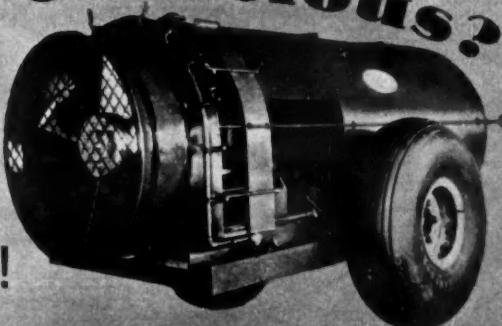
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One person operating the power hoe cultivates, hoes, weeds, and places strawberry runners.

Mechanizing Berry Growing

New tools eliminate backache from strawberry production

WHEN preparing ground for strawberries we like to fall-plow. Nothing further is then done to the ground until it is dry enough to work the following spring, when we apply about 500 pounds of 10-10-10 fertilizer to the acre, tilling it in with a Seaman Tiller.

Mechanical tilling of the soil breaks up all trash and thoroughly mixes the fertilizer so new plants can derive immediate benefit from the plant food. The tiller makes a soft, level seedbed ideal for transplanting.

The fight to control weeds starts as soon as the plants are in the ground. Using the power hoe, hoeing and weeding are done by one person, usually a teen-age boy or girl. The driver steers with his feet, leaving both hands free to manipulate the hoes which are mounted on needle-bearing universal joints and adjustable for depth so that very little effort is required to move the hoes around each plant.

The weeder follows directly over the plants and is designed to level the soft hoed soil, remove the small weeds, and



The mechanical straw spreader chops up baled straw and blows it out on or between the rows.

place the new runners in the row. If the patch is worked with a power hoe every week or 10 days it will control the weeds. We have grown 20 acres with one machine operated by one 16-year-old boy.

At least twice during the season we side-dress the plants, using a fertilizer attachment which places the fertilizer behind the two front shovels that are located ahead of the mechanical hoes.

Mechanical Straw Spreader

Mulching berries with a pitchfork has always been a backbreaking and expensive task. To eliminate this we built a mechanical straw spreader into which baled straw is fed. The spreader chops up the straw and blows it out on or between the berry rows. Now two men can mulch one acre per hour and do a better job with less straw than by the pitchfork method.

After the strawberry harvest we do not mow or burn our patch as this procedure only stunts the growth and cuts down next year's crop. We use a Seaman Tiller adapted to straddle the row and chew up the straw and weeds. Two cultivations with the tiller leaves rows of uniform width and the soil in very good tilth for the next year.

Only one backache remains—harvesting. And who knows—perhaps someone will develop a strawberry combine.—*Dave Friday, Hartford, Mich.*

CANADIANS OPTIMISTIC

THE apple industry of Nova Scotia, now producing only a fraction of its former yearly average of two million barrels, is optimistic about the future. Growers who uprooted trees and made major switch in varieties to overcome post-war market problems feel their efforts will soon be rewarded.

The 1953 Annapolis Valley crop was small to begin with and a Labor Day gale cut it still further to 400,000 barrels. The local market absorbed all the fruit available, but in an average year there is a surplus.

This market problem is the big one which growers so far haven't been able to solve to their satisfaction. Before the war about 85 per cent of the valley's exports went to the United Kingdom. This market was lost during the war and never regained.

In 1949 the orchardists started a major tree-pulling plan, designed to replace export varieties with apples more suited to the domestic market. With government financial assistance about 900,000 trees were removed. Thousands of more desirable types were planted. And about 400,000 other trees were grafted over to desirable varieties.

Now, for the 2,000 growers along the 100-mile land of Evangeline, the turning point has arrived.—*Geo. E. Toles.*

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Like the HALE for
SPEED and THORONESS!**



Above—View of Hale Sprayer spraying walnut trees.

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- Cuts Labor Cost Over 60%



Above—Side view of Hale Sprayer showing both banks of guns in action.

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- Saves time; provides volume large enough to spray at fast tractor speed. Pumps any desired capacities and pressures up to 100 GPM at 600 lbs.
- Saves money. Cuts labor cost over 60% for applying spray materials, compared to previous methods.
- Requires less effort. One man can easily operate sprayer.
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State size of orchard or grove.

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A NEW MIDSEASON STRAWBERRY

Pocahontas is adapted for south central regions



Pocahontas strawberries are large and glossy. hontas rated satisfactory in interior color, in texture, and in flavor.

The plants are vigorous, larger than Blakemore, and prolific in runner production and have shown no yellow variegation. They are not resistant to red stele root rot. The variety appears to be widely adapted through the south central United States from southern

Table 1—Yields of fruit of four varieties of strawberries, Beltsville, Md.

Variety	Crates (24 quarts) per acre		
	1951	1952	1953
Pocahontas.....	509	439	406
Blakemore.....	—	199	283
Tennessee Beauty.....	—	345	320
Dixieland.....	453	458	347

Table 2—Yield and size of fruit in 1953 of Pocahontas strawberry on plants set in March and November, 1952, Virginia Truck Experiment Station, Norfolk, Va.

Month planted 1952	No. of Plants set per acre	Type of fruiting bed	Season length	No. of Pickings	No. of Berries per quart. ¹	No. of 24-qt. crates per acre	
						March	November
March	8,300	Matted row	4/27 to 6/8	13	154	564	
November	37,000	Triple hill row	4/27 to 6/16	15	80		438

¹ Average of six pickings

Table 3—Season of ripening and size of fruit of five varieties of strawberries, 1952, Beltsville, Md.

Variety	Per cent of crop harvested			Number of berries per 1/2 pound of fruit			
	1st week	2nd week	3rd week	1st week	2nd week	3rd week	weighted average
Pocahontas.....	34	53	13	21	44	75	41
Blakemore.....	44	47	9	43	66	94	58
Tennessee Beauty..	16	64	20	25	51	92	55
Sparkle.....	14	62	24	18	38	77	44
Dixieland.....	48	43	9	20	50	69	37

picking season and have a strong to vivid red color that is somewhat deeper red than that of Blakemore. The berries are firm and glossy and have a tough skin with seeds even with their surface. The flavor is tart and good. In a test for the frozen package trade, Poca-

Pennsylvania to North Carolina.

Pocahontas yielded well in replicated plot tests at Beltsville, Md. (Table 1). At the Virginia Truck Experiment Station it received favorable attention also because of its ability to bear heavily in the spring on plants set the previous fall (Table 2).

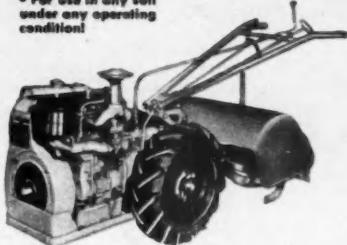
Data in Table 3 indicate the season of ripening and size of fruit throughout the season of 1952 in comparison with other varieties.

THE END

The authors of this article on the new Pocahontas are D. H. SCOTT and GEORGE M. DARROW of the USDA and M. M. PARKER of the Norfolk (Va.) Truck Experiment Station. Nurseries co-operating in developing the new berry are W. F. Allen Co. and Raynor Brothers, both of Salisbury, Md., and Bunting Nurseries, Selbyville, Del.

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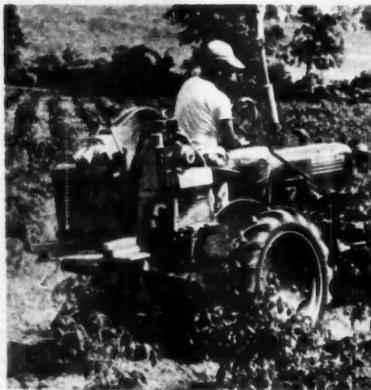
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APRIL, 1954

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ALIGHT, multi-purpose mist blower in the five to eight horsepower class, which applies concentrated spray materials efficiently and which can be readily mounted on farm tractors, small trailers, and pickup trucks, has been constructed according to specifications developed by The Connecticut Agricultural Experiment Station.

Weighing about 200 pounds empty, the machine has a capacity of about 1,500 cubic feet of air per minute at 150 miles per hour velocity. It is not large enough to properly spray shade trees taller than 40 feet, large orchards or areas. However, its construction and design adapt it for many uses including the spraying of row crops, nurseries,



Lightweight mist blower mounted on small tractor.

low shade and ornamental trees, shrubs, small orchards, grapevines, and blueberries, and also for broadcast spraying and mosquito control.

In the photograph, the mist blower is mounted on a small tractor with the outlet five feet above the ground for treating row crops. Special types of outlets are needed for treating small orchards, small fruits, and grapevines.

Bulletin No. 572, by S. F. Potts, R. A. Spencer, and R. B. Friend, of The Connecticut Agricultural Experiment Station, New Haven, describes tests made with the new mist blower. The machine was manufactured by the Homelite Corporation, Riverdale Ave., Port Chester, N. Y.

THE END

MERRILL BONANZA

THE article entitled "1953's Fruit Varieties" in the January, 1954 issue of AMERICAN FRUIT GROWER stated that the Merrill Bonanza peach variety was commercially introduced in 1953. This information is incorrect, as this variety has not been released.

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Oregon test results

Dr. Q. B. Zieliński reported on his work with the hormone chemical NXY in a "Fruit Grower" article last May. Working with strawberries he obtained increases averaging 20%. Growers who have used BERRY-SET, a special formula which contains NXY, have obtained even bigger increases.

Michigan recommends BERRY-SET

As a result of tests on strawberries, Michigan State last year recommended BERRY-SET to many growers. Using both NXY and BERRY-SET, Michigan obtained size increases averaging 30%. In some BERRY-SET tests, increases were over 50%.

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BERRY-SET is the only commercial hormone spray which has been used regularly by thousands of growers since 1950. It is the only hormone product recommended for strawberries, blackberries and raspberries.

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SPRAYING TO PREVENT RUNNERS

Chemical treatment suppresses strawberry runners; promotes development of crown-shoots

By R. F. CARLSON
Michigan State College

THE fact that strawberry mother plants are more productive than runner plants has been known for some time. This suggests the possibility of reducing runner plants and concentrating on mother plants for the strawberry crop. However, the problem is not as simple as it may appear.

The first possibility is to remove by hand all runners before they have a chance to become established. If this is done the mother plants should be planted closer together than normal so as not to waste space commonly allowed for runner plants.

A second possibility is to grow varieties that inherently produce few to no runners. In this connection plants with no runners are often observed among seedling strawberries. Plant breeders should try some of these seedlings with the idea of developing a variety with acceptable fruit and with few or no runner plants. This idea, however, poses still another problem—how to propagate the variety if it does not produce runners!

Runner Suppression

A third approach to the problem is to remove or inhibit runner plants by chemical sprays.

Considerable progress has already been made in runner suppression by chemical means. In work carried on by the writer at Michigan State College, some treatments have reduced runner formation by as much as 80 per cent.

Over a three-year period several chemicals were tested, both in the greenhouse and in the field. Chemicals most effective in reducing runners were: Dichloral urea, two applications at five pounds per acre each; phenoxyethyl trichloroacetate, two applications at three pounds per acre; and 2, 4-D, two applications at one and one-half pounds per acre. These chemicals will also control many of the weeds at the same time.

Timing of Sprays

Timing the spray is one of the most important conditions for satisfactory runner prevention. Generally, the first application should be made when the runners are in the "bud-stage." After a runner-shoot has attained a length of

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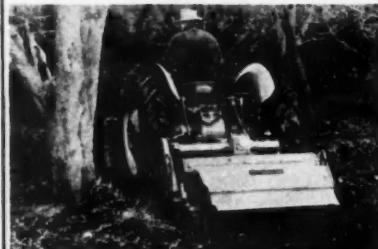
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humus . . . we Rotavate three inches deep and have not hurt our feeder roots. Our yield this year was good . . . the ground is better."

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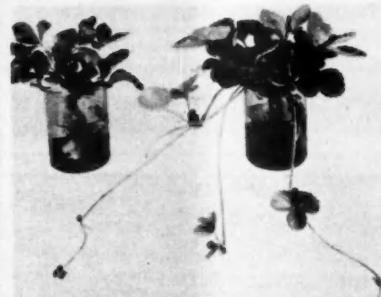
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over one inch, it is hard to stop. Since the runners are being formed during a period of about two months, two applications are needed.

Age of planting must be considered. For example, in the first-year planting, the first application should be made in early June and in the older plantings about the middle of July. The second application in each case is made about three weeks after the first spray.

Some strawberry varieties responded more favorably to the runner-preventing chemicals than did other varieties. In some instances the plants were



Strawberry plant at left was treated with phenoxyethyl trichloroacetate, thus increasing its potential production of fruit. The untreated plant, shown at the right, has the normal number of runners.

temporarily stunted but soon recovered when satisfactory growing conditions were provided.

Increase in Crown-Shoots

One other interesting observation connected with this work of runner inhibition was the increase of new crown-shoots when the runners were inhibited. These additional crown-shoots on the mother plant, of course, are potential fruit bearing areas. It appears that when one phase of development of the strawberry plant is interfered with, the successive phase takes over. The mother plant instead of feeding the runner plants is thus feeding the fruit-bearing crown-shoots.

This article is not intended to recommend full-scale spraying for prevention of runners but merely to inform that it can be done. Interested growers might want to try a row or so. The approach to controlling runner formation by chemical means is new but is worth exploring to see if it is something that can be used to advantage. THE END

Dichloral urea and phenoxyethyl trichloroacetate are manufactured by Carbide and Carbon Chemicals Company, 30 East 42nd St., New York 17, N. Y.

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From where I sit ... by Joe Marsh

Easy Does It—Again!

Ladies Aid Society had their rummage sale the other night—and as soon as the doors opened, "Easy" Roberts was inside.

Without a word, he headed straight for the coat counter, quickly picked out a shabby old tweed jacket, and paid for it. "Easy" told me a little later that buying his jacket back was getting to be a regular habit.

"That's been my favorite smoking jacket for years," he said. "And my wife talks me into giving it away regularly. Then I get to thinking how much I like it

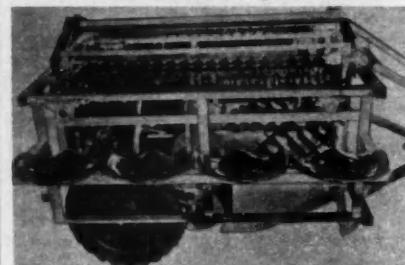
and hurry right down to buy that jacket back. This is the third time I've done it!"

From where I sit, everyone's entitled to his own likes—whether it's a sports jacket, a baseball team, or the beverage he likes for dinner. For example, the missus always likes coffee along with Saturday night spaghetti while I like a temperate glass of beer. We never try to "sell" each other on our personal preferences.

Joe Marsh

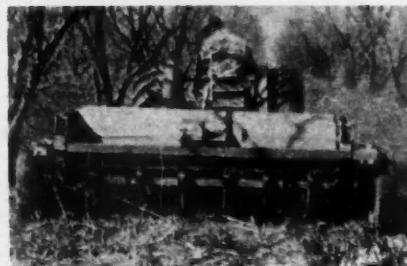
NEW FOR YOU

Plant Mechanically



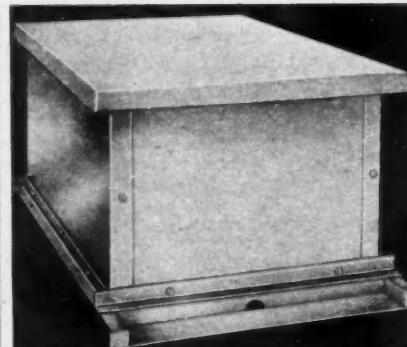
The new Elco Transplanter can be drawn easily by a medium-size tractor and is manned by two to six persons. Transplanting is fully automatic. Rubber-clad fingers release the plant at a predetermined depth behind a specially designed plow. Packing wheels immediately pack the soil around the plant. The machine handles with ease nursery stock from four to 20 inches long. We urge you to write Harvey Ludwig, Elco Products, Corp., West Allis, Wis.

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Bee Housing



One way to insure better pollination and healthier bee colonies is with the new Uni-Temp aluminum bee hive. The Uni-Temp has undergone rigid orchard tests and the

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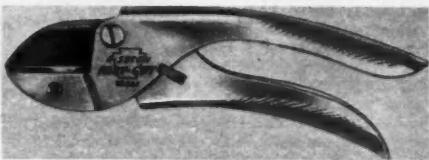
results prove that it has paid for itself. Write A. H. Hale Co., Hapeville, Ga.

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Once a grower has determined whether to irrigate, he must be able to measure the amount of water to put on. A device, known as the Irrometer, has just been perfected which will measure the amount of water needed. The instrument is accurate within three per cent. Irrometers are made in six standard lengths. We suggest you write T. W. Prosser, 3695 Main St., Riverside, Calif.

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PLUM CURCULIO

(Continued from page 20)

nation with the approach of cold weather. The feeding punctures are small, circular holes. The eggs are laid in small cavities in the fruit about which characteristic crescent-shaped cuts are made by the females.

The eggs hatch in about a week into small, yellowish-white grubs. The grubs feed in the flesh of the fruit, becoming full-grown, about three-eighths of an inch long, in two weeks or more. Upon reaching maturity they leave the fruit and enter the soil to a depth of two or three inches where they complete development into adult beetles. About a month is spent in the ground.

Two generations of the plum curculio usually occur in the area in the latitude from Virginia southward and one generation in the northern range. A partial second generation occurs some years in an intermediate area of the latitude of from Delaware to Virginia.

Control. On apples, spray the trees with lead arsenate, three pounds, or with a combination of lead arsenate, two pounds, and 50 per cent DDT wettable powder, two pounds, in 100 gallons of water; a) at petal fall, b) 7-10 days later, and c) about two weeks later.

On peaches and other stone fruits, schedules vary widely in the various fruit areas. Only a general schedule can be given here. Consult local authorities for more detailed schedules for your area. Spray the trees with either lead arsenate, two pounds, plus hydrated lime, eight pounds, 15 per cent parathion wettable powder, two pounds, or 25 per cent EPN wettable powder, two pounds, in 100 gallons of water.

In areas where one brood occurs apply the insecticide: a) at shuck split, b) 7-10 days later, c) 7-10 days after (b), and d) if parathion is used, 12-14 days later. In areas where a second brood occurs, spray: a) just after the petals have fallen, b) when the shucks are shedding, c) 7-10 days after (b), and d) about one month prior to harvest. If parathion is used, apply (d) about five weeks before harvest and spray again (e) three weeks before harvest.

Dieldrin is extremely effective against this curculio, and can be substituted for other recommended materials, one pound of 25 per cent wettable powder per 100 gallons, in the petal fall and the following application. It should not be used in later applications. If parathion, EPN, or dieldrin are used observe all recommended precautions for handling these materials.

Certain supplementary measures assist in control. Jarring the trees with a padded pole to dislodge the beetles from the trees onto a sheet spread under the trees in the spring and collecting and destroying them is of considerable value. Collecting dropped fruit is of even more value, especially in the areas in which there may be two broods. One collection and destruction of the fruit about a month after full bloom, or when there are enough drops to warrant their collection, and two others at intervals of five or six days will usually be all that is necessary.—Howard Baker, USDA.



The Lyman Orchards in Middlefield, Conn., find this large-size tractor-powered and operated posthole digger speeds up their tree-planting operations.—Arthur C. Bobb.

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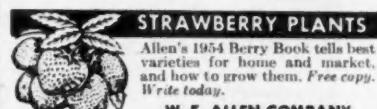
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by L. C. Tracy



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An advertisement of B. F. Goodrich—First in Rubber

The Orchard Home

SALADS take the limelight this month. Below are many from which to choose—those to complement a meal and those to be used in place of a meal. And there are also some dressing recipes you will want to try.

FROZEN SWEET CHERRY SALAD

2 cups pitted sweet cherries
 ½ cup diced fresh pineapple or apple
 ½ cup sliced bananas
 ½ cup chopped nuts
 ½ cup mayonnaise or salad dressing
 ½ cup cream cheese

Pit cherries. Slice or leave whole. Combine with other fruit and chopped nuts. Blend together mayonnaise and cream cheese. Add dash of salt. Combine with cherry mixture and pack into refrigerator tray. Freeze until firm. Cut into squares and serve on crisp lettuce. Garnish with mayonnaise or whipped cream and whole unstemmed cherries.

FROZEN FRUIT SALAD

1 cup diced fresh peaches
 1 cup diced pineapples
 ½ cup cut celery
 ½ cup nut meats (almonds preferred)
 ½ cup mayonnaise
 ½ cup whipped cream

Mix fruit with celery and nuts. Fold mayonnaise into whipped cream and combine with fruit. Freeze several hours in refrigerator tray. Slice and serve on lettuce.—Mrs. F. B. Hittle, Dodge City, Kans.

GRAPE CLUSTER SALAD

Pear halves
 Lettuce leaves
 Cream cheese
 Milk
 Grapes
 French dressing

Place each pear halve, round side up, on a bed of lettuce leaves. Slightly soften cream cheese with milk and spread over each pear half. Cut grapes in half, remove seeds, and cover the pears with grape halves to resemble bunches of grapes. Place a bit of grape stem in large end of each pear. Serve with French dressing.

FROZEN PEAR SALAD

2 cups diced pears
 Juice 1 lemon
 ½ cup chopped walnuts or pecans
 ½ cup sliced bananas or chopped dates
 ¼ cup sliced maraschino cherries
 ½ cup mayonnaise
 ½ cup cream cheese
 ½ teaspoon salt

Peel and dice pears and sprinkle with lemon juice. Mix with chopped walnuts, bananas or dates, and sliced cherries. Blend together mayonnaise and cream cheese. Combine with fruits, mixing well. Add salt. Pack into refrigerator tray and freeze until firm. Cut into squares and serve on crisp lettuce. Garnish with mayonnaise or whipped cream and cherries.

ORANGE GINGERALE RING

1 envelope gelatin
 ¼ cup lemon juice
 ¼ cup sugar
 ¾ cup orange juice
 ¼ teaspoon salt
 1 cup gingerale
 1 cup orange sections
 ½ cup pecan halves

Put lemon juice in small saucepan. Sprinkle gelatin over top and let set about five minutes.

Heat mixture until gelatin is dissolved. Add sugar, salt, orange juice, and gingerale. Arrange orange sections and pecans in mold or add to gelatin mixture. Pour gelatin into mold and place in refrigerator. Unmold and serve with cottage cheese and orange slices.

WALDORF SALAD

3 medium-sized apples, diced
 2 tablespoons lemon juice
 ½ cup diced celery
 ¼ cup nut meats (optional)
 ¼ cup Cooked Fruit Juice Dressing
 Crisp lettuce

Use firm eating apples. If skins are red and free from blemishes, they need not be pared. Sprinkle apples with lemon juice and combine with celery, nuts, and dressing. Toss lightly and serve on crisp lettuce.

Cooked Fruit Juice Dressing

2 egg yolks
 ¼ cup sugar
 ¼ cup pineapple juice
 ¼ cup orange juice
 2 tablespoons lemon juice
 ½ cup sour or sweet cream

Beat egg yolks. Add sugar and stir until well blended. Combine with fruit juices in top of double boiler and cook, stirring constantly over hot, not boiling, water until just slightly thick, about 8 to 10 minutes. Cool and fold in whipped sour or sweet cream. This makes about 1 cup dressing.—Mrs. Ray Westphal, West Allis, Wis.

Why not try these salad suggestions:

Take a cupped lettuce leaf. Fill with a mound of cottage cheese. Cover with orange slices and garnish with fresh cherries.

Combine 1 cup pitted sweet cherries, 1 cup melon wedges, 1 cup fresh apricot halves, and ½ cup avocado wedges with ½ cup French dressing. Serve on crisp lettuce. Serves 6.

Arrange orange slices and grapefruit sections on shredded lettuce. Garnish with prunes stuffed with cottage cheese. Use favorite dressing.

Now here are a few dressing recipes:

LEMON FRENCH DRESSING

½ cup lemon juice
 ½ cup salad oil
 1 teaspoon each salt and paprika
 2 tablespoons sugar or honey

Shake ingredients together well before serving. Yield: about 1 cup.

LEMON AND HONEY DRESSING

Blend equal parts of honey and lemon, or vary to taste.

CRANBERRY SALAD DRESSING

3 tablespoons lemon juice
 1 teaspoon salt
 ½ teaspoon pepper
 ½ teaspoon paprika
 9 tablespoons salad oil
 6 tablespoons cranberry sauce

Place all ingredients in a pint jar. Cover and shake until well blended. Store in refrigerator until ready to use. Good to serve on plain lettuce. Makes 1 cup.

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• Fruit for Health •

Eleven Ways to Hurt Yourself and Your Business

FROM a trade paper comes a statement of "how to kill your association." It comes in eleven strong points, as follows:

- 1) Don't attend meetings.
- 2) If you go, go late.
- 3) If the weather isn't pleasant, stay at home.
- 4) Don't accept any office, it's easier to criticize.
- 5) Never approve anything your officers or committeemen do.
- 6) Insist on official notices being sent you, but don't pay any attention to them.
- 7) Don't waste any courtesy at a meeting; it's up to your officers to take it.
- 8) When you don't like what's going on, say so but under no circumstances offer any constructive suggestions.
- 9) Devote most of your time to talking, let someone else do the work.
- 10) Don't co-operate with any officer or

committee, make them co-operate with you.

- 11) Remember, you know more than anyone else about everything. If they don't agree with you they are wrong.

The philosophy is good. But maybe it should be carried one step further. It is presented in terms of an association. How about thinking in terms of the individual?

For, surely, if there are any eleven points on how to hurt one's self in his business, in his community, in his church, in his association, in his family, in fact in all places where more than one person is involved, these are among the best.

Or, to give the thought another twist and to make it more constructive, perhaps the title should be "Eleven Ways to Bring Success to Yourself and Your Business," and the warning should be to *do* rather than *not to do*.

It is a good bit of philosophy, worth cutting out and pasting on your mirror where you shave every morning.

Fruit Talk
British exporters are planning a drive to introduce black currant juice into American markets.

An interesting **Fruit Tree Survey of Pennsylvania** made by K. R. Slamp of the Bureau of Markets shows that Stayman is barely holding its own as the leading apple variety in the state. York Imperial, Rome, and Golden Delicious dominate in new plantings.

In this same survey, Redhaven, Sun High, Triogem, Jerseyland, and Rio Oso Gem peaches are increasing, whereas, Elberta, J. H. Hale, Golden Jubilee, Georgia Belle, and South Haven are declining.

We must spray for anthracnose control in brambles if we wish to remain in the raspberry business, says Dr. A. S. Colby of Illinois.

The blueberry has as long a picking season as any fruit—from July 4 to the end of August—with such varieties as Early Blue, Blue Crop, Berkeley, Jersey, and Rubel, ripening in that order.

High yields of apples are closely related to size of fruit, says R. V. Lott of Illinois. A thousand fruits of 2 to 2½ inches in diameter will make 2.73 bushels, whereas the same number 2¾ to 2½ will make 6.21 bushels.

The export-payment program for the 1953-54 orange and grapefruit crops provide a payment of \$1 a box for fresh oranges and 75 cents a box for fresh grapefruit.

Exports of oranges for 1952-53 under the export-payment program included 46,000 boxes, 51,000 cans (24 No. 2's) of single-strength juice, and 447,000 gallons equivalent of concentrated juice.

One of Iowa's gifts to horticulture is the Delicious apple, discovered in 1878 in Iowa and introduced in 1905—now the No. 1 apple in America.

Says Dr. R. H. Roberts of Wisconsin, the new era in apple production in America calls for apples with a minimum of 2¾ inches in diameter.

Water is the major problem of agriculture and the world's food supply.

The Dayton strain of Montmorency, according to C. L. Burkholder of Purdue, is superior to many run-of-the-mill Montmorencies, recommended by large size fruit, high yields, and good stands of trees in the nursery.

There has been no really superior pear developed in America in 100 years, says Stanley Johnston of South Haven. The industry is based almost exclusively on European varieties.

A Cornell survey shows that 40 percent of the cost of growing apples to picking time is in spraying, of which the spray materials are about two-thirds and labor and equipment about one-third.

H.B.T.

Coming Next Month

- Is Grape Phylloxera Harming Our Vineyards?
- A Business Approach to Apple Production
- Tree Nuts—Prince of Proteins
- Fruit Acres—The Story of a Diversified Fruit Farm



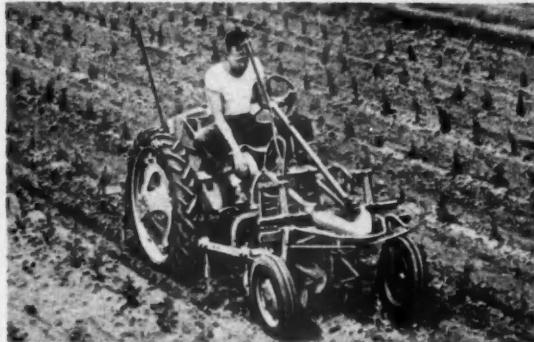
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Malathion more useful than ever!

The U.S. Department of Agriculture has accepted, as of January, 1954, the following additional claims for malathion—Cyanamid's new multi-purpose insecticide:

APPLES:

Codling moth
Plum curculio
Red-banded leaf roller
Bud moth

CHERRIES:

Black cherry aphid
Fruit tree leaf roller

PEARS:

Codling moth
Plum curculio
Fruit tree leaf roller
Red-banded leaf roller

PEACHES:

Spider mites:
European red mite,
two-spotted mite
Oriental fruit moth
Plum curculio

PLUMS and PRUNES:

Mealy plum aphid

BEETS:

Aphids

CUCUMBERS, SQUASH and MELONS:

Aphids
Spider mites

EGGPLANT:

Spider mites
Aphids
Lace bug

PEPPERS:

Aphids
Aphids

PECANS:

Spider mites

ORNAMENTALS:

Six additional scale insects, also lace bug, leaf miners, pine shoot moth, tent caterpillar

Previously accepted label claims for malathion:

APPLES: spider mites; European red mite, two-spotted mite, Willamette mite, clover mite; woolly apple aphid, green apple aphid, rosy apple aphid, Forbes scale

PEARS: spider mites, pear psylla

GRAPES: grape leafhopper, spider mites, mealybug

DATES: nitidulid beetle (dried fruit beetle)

TOMATOES: spider mites, aphids

BEANS: Mexican bean beetle, leafhopper, spider mites

CABBAGE, BROCCOLI, TURNIPS, MUSTARD, KALE: aphids,

imported cabbage-worm, cabbage looper

PEAS: pea aphid

POTATOES: aphids

COTTON: aphids, spider mites

SEED ALFALFA: spider mites, aphids

ORNAMENTALS: Twenty label claims including aphids, mites, thrips, mealybugs, leafhoppers, scale insects, etc.

Malathion also controls FLIES, even DDT-resistant strains, in and around buildings which house domestic animals.

This extends the usefulness of malathion to growers by enlarging the range of crops and pests covered. Malathion is preferred by many growers because of its high efficiency in controlling insect pests and its wide margin of safety for the applicator.

and application procedures. Malathion is marketed by local and nationally known formulators under their own brand names.

Consult your local agricultural authorities for suggestions on dosages

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